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ICL to release its first Mitel product in July

by Donald Kennett

THE first product ICL will market under its agreement with Canadian telecommunications manufacturer Mitel will be released in the UK next month. It is a digital telephone exchange which features an Ethernet local area network interface and separate switching for voice and data.

First deliveries of the SX-2000 exchange are due in the first quarter of next year both in the UK and North America. Chris Elmer, UK managing director of Mitel, emphasises that it was designed for world markets.

The SX-2000 will also be supplied by British Telecom and Norton Telecom, a UK company which has specialised in telephone exchanges.

Mitel itself intends to stick to manufacturing the system, with plans to open a factory in the UK in 1984 or 1985.

Mitel has earned a reputation for the compactness and efficiency of its earlier analogue electronic telephone exchanges. It caused a row two years ago when it became the first company outside the UK telecommunications industry to supply small PABXs to British Telecom.

The SX-2000 is Mitel's first digitsl product, and also its largest. The SX-2000 starts with 768 ports (usually allocated 90% to extensions and 10% to exchange lines) and grows by 1,536H-port cabinets to over 40,000 ports.

Mitel product manager Alan Horne puts the UK market for PABXs with more than 250 ports at 500 to 700 exchanges a year, and says that Mitel is going after 100% of it. Later, he adds, the system will be brought out in a versioo to suit the market for exchanges with fewer than 250 ports.

An important attraction of the system will be the terminal equipment available with it. The exchange will bandle conventionql analogue telephones snd Ascii terminals, but Mitel will make a range of terminals, called Supersets, which are designed to offer users a progression lrom simple handsets to complex multifunction terminals.

Features of the latter will include high-resolution colour graphics, voice message handling, word processing and viewdata facilities, as well as the capability to emulate IBM 3270 terminals and to control terminal clusters with an aggregate data rate of 256 Kbits-per-second.

IMLAY . . . Talking to DEC about extending the deal.

Peachtree-DEC pact could extend to US

by Boris Sedacca

A LOCAL agreement bas been signed between the UK subsidiaries of microcomputer software house Peachtree and Digital Equipment, It could pave the way for s bigger US deal between the two companies.

"We are presently talking to DEC about extending the deal to the US but we have not secured a contract yet," said John Imlay, chairman of Management Science America, the US software house which last year acquired Peachtree.

The UK agreement will put Peachtree application software on DEC's CP/M based microcomputer products — the sdd-on processor option to the VT100 terminal, the Rainbow 100 at the bottom-end of DEC's newly launched personal computer range, and the DECmate II from the same range running under the CP/M option.

Software for the flagship product in the range, the PDP-11-based Professional Series, will follow towards the end of the year.

The Rainbow is a dual-processor microcomputer running the de facto industry standard operating system for micros, CP/M.

Peachtree's claim to fame is a software deal signed with IBM for the Personal Computer, also an industry standard CP/M machine. Both the DEC Rainbow and IBM's Personal Computer run CP/M 86, a modified version of CP/M adapted to run on the 16-bit Intel 8088 microprocessor used on both machines.

Lundy pull-out at Giro

by Kevin Cahill

THERE is peace again at the National Giro Bank data processing centre in Bootle, following the amicable departure last week of Lundy Farrington, one of the centre's maintenance contractors. Earlier this year withdrawal of cover by the Lundy engineers led to a total machine stoppage in the Giro centre, which processes over 6,000,000 cheques and other documents each day, mostly on Farrington equipment.

Engineers had withdrawn cover after a new maintenance contract was awarded to DPCE, Independent contractors based in Wokingham. The Farrington managemeot had resisted DPCE's use of what Farrington termed "proprietary information" in order to establish DPCE's position on the Bootle site.

A spokesman for Farrington said that the parting was friendly, and that Giro had made suitable financial arrangemeots.

He refused to comment on the faet that Farrington were not originally due to leave the site until September. He added that the Farrington engineers were now deployed elsewhere.

Overseas labour saves British software firm half development costs

by Claire Gonding

A UK software company is claiming that it can halve software development costs by using cheap overseas talent.

Delta Conversions is cutting its development costs by employing teams of highly-qualified programmers in India where salaries are roughly a third of those earned by similarly skilled programmers in the UK.

Delta also has staff in Abu-Dhabi and Hong-Kong, although the bulk of the work is done in India. Software is written by the Delta staff in India and then sent back to the UK for the final phase of development.

This can often involve converting the software from one hardware environment or language dialect into the final target environment — hence the "Conversions" part of the company's title.

Although the conversion phase is an overhead, Delta Conversions has developed particular skills in migration and translation of applications, and is still able to deliver entire projects at 50% of the US costs, according to UK software sales manager Barry Patmas.

"The strength of the market on there is the quality of the people and the work they produce. All the people who work for us are top level graduates."

To critics who accuse Delta Conversions of exploiting cheap labour, Patman points out that the salaries paid by Delta are above par for India, and that savings are passed on to the customer.

Other companies such as Peroughs and Systime have been using Indian labour for years, but Delta Conversions believes that its way of operating is unique, not just because of the migration unit, but because ties are close and are maintained by sending UK staff to India for systems analysis, and bringing Indian staff to the UK for the final development phase.

'Patriotic' bar on IBM

by Andrew Thomas

THE US attitude to the Falklands crisis lost IBM the chance to win a deal worth almost £16 million. The Severn Trent Water Authority had tenders from IBM, ICL, Honeywell and Univac for replacement hardware worth £15.9 million, and IBM claims that the selection criterio were "substantially" changed after the tenders were submitted.

IBM was the first choice of the authority's technical committee, but at the authority's annual meeting chairman Sir William Dugdale said the US stance on the Falklands was "inadequate" and, a IBM was a wholly-owned sub sidiary of an American company, the deal should oot be awarded to them.

IBM claims that the authority went against its own rules by overruling the technical recommendatioos, and is seeking a High Court injunction to stop the ICL contract being signed. Univac is "considering its position" and may also take legal action, and ICL is contemplating taking action to protect its interests.

£1.25m Tandem deal

by Andrew Thomas

THE Bank of England has decided on Tandem equipment for the prestigious Book Entry Transfer (BET) system to be set up in conjunction with the London Stock Exchange.

The £1.25 million deal for Tandem's Non-Stop 2 bardware was won against fierce competition from IBM and DEC. It follows close on the heels of Tandem's sward of the multi-million pound Chaps (Clearing House Automatic Payment System) involving the supply of hardware to the major clearing banks.

BET will have 275 users in its initial stages and will provide s mechanism for the transfer of gilt stocks without the cumbersome and time-consuming method of using written certificates — s procedure causing increasing problems with greater activity on the gilt market. Operational costs will be in the region of £1 million a year.

"This is a prestigious contract of importance to the smooth running of the gilt-edged market," says London area manager Allen Brain. "We are proud to be an important participant."

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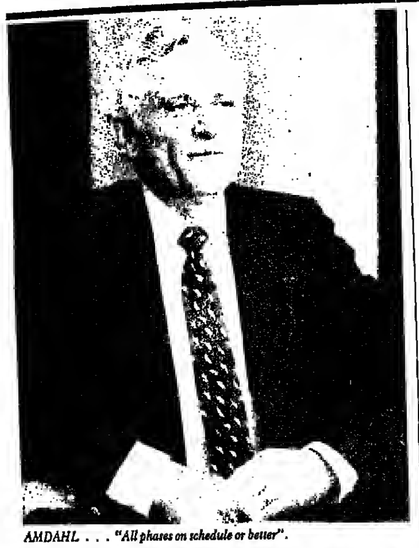

AMDAHL . . . "All phases on schedule or better".

Trilogy signs super deal with Japan

by Kevin Cahill

TRILOGY CORP, which is not due to ship the first of its new supercomputers until late 1985, has signed a major marketing agreement with one of Japan's biggest trading companies, Sumitomo, to market the Trilogy range in Japan and the Far East.

And the company is already talkiog to its first US and European customers, although no orders have been signed yet. The 50 million instructions per second computer is to be manufactured in Ireland.

Gene Amdahl, founder of Trilogy and a founding director of the Amdahl Corporation, told a meeting of the investors who have put up a total of $160 million for the new company, that all phases of the project were oo schedule or better.

The company's semicooductor facility, whicb was earlier delayed by 60 days due to beavy Californian rains, is oow back on schedule, according to Amdahl.

Much of the advanced design testing and logic simulation for the Trilogy machine is now complete. Amdahl said the final Trilogy product would not be a single device but a range of machines, all fully IBM-compatible.

He said that although linka with customers had already been established, his company would not be appointing marketing staff until later next year.

The company would be starting manufacture of the first of its machines in July 1983 with Irish engioeers from the Trilogy plant in Dublin jolning the prototype manufacturing in California.

Although Amdahl's chances of producing his machines on time and to specification are well rated inside his old company Amdahl, other commeotators in Silicon Valley are not so sure.

Several Japanese companies, notably Hitachi and Fujitsu, have put the cost of launching a brand new IBM compatible mainframe like the Trilogy machine at $300 million. This is twice the sum raised so far by Trilogy.

Add-on snags hit IBM 3081 shipments

by Kevan Pearsnn

DELIVERIES of IBM's top performance computer systems are being severely depressed both by the lack of peripherals to drive the systems at their potential and IBM's announcement nf a cheaper mid-range alternative.

Many users in Europe and the US have been unwilling to take early deliveries of IBM's 3081s. They are taking deferrals instead, and sometimes switchiog to the mid-range 3083, announced in April, according to industry sources.

The launch nf the 3083 drove prices of used 3033s down sharply. The 3033 is directly comparable in performance terms, making it difficult for some users to justify taking delivery of the much larger 3081s.

According to Ulric Weil, an analyst with Morgan Stanley in New York, prices of the 3033 have dropped from 60% of IBM's list prices to under 35% since the launch of the 3083.

Users have had to accept large book losses on the upgrade, or defer taking the larger systems while the recession lasts.

The position has been repeated in Europe, though prices of used 3033s have not fallen so badly. Logan White, a director of Mega-Leasing says that European prices could fall to similar levels as those in the US by the end of the year. But Parry Mitchell, chairman of United Leasing, and John Fuller, a director at PCML, do not expect prices to drop that sharply.

All agree that the 3081 order position in Europe is "very soft".

They attribute this to the launch of a cheaper alternative in the top model of the 3083 series, and to the lack of system peripherals, notably the high performance 3380 disc drives and a high performance tape system, to drive the 3081 at its true potential.

Without these peripherals, says White, users could find themselves paying a lot of money up front when they replace a 3033 with a 3081D, but be unable to get any increase in system performance. This combined with the launch of the 3083, he says, has led many users to change their upgrade plans in favour of the 3083.

According to White, there are already three second user 3081s available in Europe for delivery early in 1983, at prices "well below" IBM's list price.

The slackening off in orders has led many US analysts to predict a sharp drop in IBM's share price. In one case a drop is predicted from the present $58 a share to $44 on the strength of a potential decline in turnover which the order position could precipitate.

The news also had a bad impact on Amdahl's shares. They fell from around $25 to just over $18. Amdahl's 58/60, which is even more powerful than IBM's 3081, is due for first deliveries in August.

The first Amdahl 58/60 ready for shipment from the Sunnyvale plant.

All systems go—to the North

FOR the second year running, Computer Weekly is taking its successful Compec exhibition to the North. Compec North will be held in Manchester next week, from June 22 to 24, at the Belle Vue Centre.

A preview of the exhibition can be found on pages 24 to 27. Also in this week's issue, is a special recruitment supplement featuring jobs throughout the Midlands and the North.

More than 105 companies will be showing their wares on nearly 200 stands at the exhibition. Further details can be obtained from IPC Exhibitions, Surrey House, 1 Throwley Way, Sutton, Surrey. Tel: 01 643-8040.

ICL chairman knighted

by Kevan Pearson

INDUSTRY figures picked up seven awards in the Queen's Birthday Honours list, including two knighthoods.

One of the knighthoods goes to Christopbor Laidlaw, chairman of ICL and former deputy chairman of British Petroleum. It is the second piece of good news for Laidlaw in recent weeks: last week it was announced that ICL is on course for a return to profitability in 1982. It is already trading profitably if the prodigious interest charges it currently pays are ignored.

The other knighthood was awarded to John Hoskyns, founder of the Hoskyns software group who, until April, headed the Prime Minister's policy unit. Hoskyns is returning to private industry.

There are two CBEs, one for Douglas Morrell, deputy managing director of Racal Electronics, and one for Professor Robert Churchhouse, a computer science lecturer.

The industry also gets two MBEs: one to the managing director of Compugraphics International, Graham Bowen; and the other to Geoff Glossop, chief executive of Midlectron, the Belper-based peripherals and systems company. Glossop founded Midlectron eight years ago and has guided it to its present multi-million pound turnover.

Margaret Wood, a member of the Glonrothes Development Agency, which has been successful at attracting high technology investment to the area was awarded an OBE.

INSIDE THIS WEEK'S ISSUE

US chain plans 40 UK stores 2
Racal ventures into expert systems 6
NCC in Houston — two-page report 8/9
Multi-million boom for Commodore 14
UK cuts 'permanent damage' fear 56
Joint ventures call 3
ACT beats slump 4
Software File 10
Micro News 12
Company News 17
Op Spot 15
Gilb's Mythodology 15
Focus on strange names 16
Human Touch 16
Downtime by Cleod 18
Letters 19
Liverpool File 19
Programmers Page 20
Puzzler 20
People/Diary 22
Computastore 23
Marketplace 28/29
Sales Biz 55
Jobs: Pages 30/55

Unions to accept ICL pay offer

by Andrew Thomas

ICL workers are likely to accept the latest pay offer from the company. Union leaders met ICL management on Monday in Birmingham, and it is expected that union members will be advised to accept the offer when it is put to the vote later this month.

An original 5% across-the-board rise was rejected by the workforce, who considered that the lowest-paid would suffer undue hardship. ICL has now put together a slightly modified package in which employees earning less than the median salary of £4,680 would receive an extra £4.50 o week.

Union sources within the company feel that the offer will be accepted on condition that further negotiations take place next January, after the company's full year results are known.

US software piracy suit

by Maggie McLening

US software house ABC Management Systems is suing the International McCormack & Dodge Corp for alleged piracy of one of its software packages.

AMS claims that M&D broke a licensing arrangement to sell its ABC System, a modelling tool, solely within the US. AMS says M&D copied the software and sold it in Europe as the Fast report writer within M&D's G/L Plus general ledger system.

M&D admits that Fast was derived from the ABC system, but says that the software is now changed so fundamentally that the original licensing agreement no longer applies. This means that the legal action could hinge on expert testimony as to similarity.

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Links to remote sites for Zynar network

by Donald Kennett

COMMUNICATIONS links to remote sites and to mainframes are two of the planned series of enhancements to Zynar's Cluster One local area network.

The company believes the new features will help to quadruple sales this year of the network for Apple microcomputers.

The enhancements will be introduced through a variety of deals with other companies, as well as Zynar's own developments and those of its sister company Nestar.

Zynar was set up in the UK early in 1980 to distribute Nestar's networking products. Last year it converted its initial minority shareholding in California-based Nestar into a majority one. The two now operate as a joint international company.

The first remote communications product, the £1,000 FTS file transfer server, is designed to transfer files of any size automatically at pre-set times or regular intervals to another FTS on a remote Cluster One network, or on request directly to or from a user station.

The hardware is based on the Owltel viewdata interface from Owl Computers.

Another communications device is the buffered communication card, which has its own 6502 processor with up to 8 Kbytes of ROM control programme and up to 8 Kbytes of RAM.

Mainframe links will be supported by servers to emulate IBM's 3780 and 3270 terminal protocols later this year.

The company wants its customers to be able to integrate local network and mainframe facilities, but it also believes that adding communications to personal computers can be the basis of an alternative to mainframes and minis.

The market push is to be fuelled by supporting industry standard packages.

Next month, a multi-user version of Micro Focus' CIS Cobol language is to be available, running under CP/M according to Zynar Managing Director Colin Crook.

A venture of a rather different nature is the company's plan to foray into leisure or games software, with the first product due next month under the label The Leisure Collection. Initially it will involve simply buying and marketing other companies' products for standalone Apples, but Zynar is working on a specialised implementation of its network for "professional leisure network operators", which could lead to a new type of amusement arcade.

CROOK . . . Zynar plans for "professional leisure network operators".

Machine tool industry 'undermined' fear

by Donald Kennett

MIXED reactions greeted last week's announcement of £60 million worth of support for flexible manufacturing systems. The Department of Industry scheme, which is designed to encourage the application of computer control to batch production processes, has aroused fears that the UK machine tool industry could be undermined by subsidised imports.

But Information Technology Minister Kenneth Baker said: "We will do everything we can to promote British machine tools and equipment and it is very encouraging that a growing proportion of robots is being produced in the UK."

Scepticism about the ambiguities involved in requiring applications for grants to show some degree of innovation was answered by Christian Adams, head of the DoI section sponsoring the machine tools industry. It was the department's intention to be selective, he said, and there would be criteria other than innovation.

A proposal would also be attractive if the market for the products involved was expanding, or if it brought about the first application of flexible manufacturing in an industry or a geographical region, or if it were in the national interest in some other way, he added.

Welcoming the scheme, engineering company chairman Sir Jack Wellings, of The 600 Group, said: "This will enable many of us to have a go and see if we like it." His company already has a flexible manufacturing system which it started work on four years ago.

ADAMS . . . "Intention to be selective".

The scheme allocates £35 million under the Industry Act, as well as £25 million under the Science and Technology Act which can be used for riskier plans.

● Cranfield Institute of Technology has announced what is believed to be the world's first Master of Science (MSc) course in flexible manufacturing systems.

'Low investment in micros' protest

THE East Midlands has the lowest investment in installation of microelectronic equipment in the country, according to John Farr, Tory MP for Harborough.

In the Commons he called on the Prime Minister to take a major initiative through the Departments of Industry and Education and Science, the Manpower Services Commission and the Microprocessor Application Programme to change the situation.

Mrs Thatcher pointed out that the government had announced substantial programmes to encourage new technology.

US chain plans 40 UK stores

by Boris Secacca

THE giant US micro retailer Computerland chain is set to make a push into the UK market. It has bought the name Computerland from Comart and plans to open up its first two stores in London towards the end of the year.

The US company hopes to open 40 stores in the UK over the next five years. Comart bought the Byte Shop, which had rights to the Computerland name when it folded years ago. Comart will retain the Byte Shop name for its retail operations.

According to James Minotto, president of Computerland Europe, his company will also take over Comart's legal action against Microcomputerland, the troubled self-appointed distributor for the IBM Personal Computer, which has now stopped trading.

Meanwhile, the two Microcomputerland offshoots, Microland and Microcomputersource, are keeping an eye on each other. Pierre Rarama, a former ex-Microcomputerland salesman, fired by managing director Mick Punter, and now working for Microland, said he received a call from Microcomputersource director Norman Park asking for supplies of the machine.

"We are offering the IBM Personal Computer at £2,450 against the old price of £2,950, and we have so far taken orders for 12 machines," Rarama said.

Reservations can now be confirmed on Prestel

by Donald Kennett

PRESTEL has teamed up with travel industry communications specialists Videcom to overcome one of the long-bemoaned shortcomings of its bookings systems – that reservations could not be confirmed at the time of placing.

Building on Prestel's recently opened Gateway, which enables information providers to set up direct links between their computers and Prestel, the two companies are to launch a service called Skytrack which does the airlines' end of the job for them. This could save the airlines up to £100,000 each and accelerate the spread of online access to their systems.

Videcom has specialised in making terminals and communications controllers for multiple system access in the travel industry since its formation in 1972.

"Videcom invented multi-access for the airlines," said managing director Keith Barker, "We pioneered it with them in the Travicom reservations service and took it around the world.

"There are already 2,800 travel agents' offices equipped with Prestel sets. We are in discussions with 30 airlines for Skytrack."

While Videcom is to recruit the airlines, Prestel will recruit travel agents.

NEWS BRIEF

NCC micros for industry package

A MODULAR package of tricks materials for management, tended to speed up the use of microelectronics in industry, be put together by the Nation Computing Centre.

The package will be designed for use in industry and educa and will be ready early next ye Pilot courses will run this summe The scheme is backed by the D partment of Industry's Microp cessor Application Project.

HP sales up

HEWLETT-PACKARD's second quarter results show a 22% increase in sales and a 34% rise in earnings. Orders received in the three months to April 30 exceed $1 billion for the second quar running, and net earnings we $94 million, equal to 76 cents share.

Profits slip

PERKIN-ELMER, the US minicomputer maker, saw third quarter profits slip 27% to $0.8 million on sales of $235.5 millio down 11% on the comparable figure of a year ago. For the nine date the company reports profits $41.9 million, a drop of 24% e last year. Sales in the nine months fell 6% to $766.9 million. Orders for the nine months slumped 1 to $7.11 million.

Banks warning

BANKING Information Servic has warned that the encoding of bank credit vouchers by charact produced on dot matrix printers will not be suitable for the banks' credit clearing system when it is automated at the end of 1983. Character quality will have to comply with OCR-B specifications as set out by the Inter-Bank Standards Unit.

£500 million strike

LAST year's disruptive action by DP staff at key computer centres in support of demands for higher pay for civil servants cost the government £500 million in interest charges. The money went on borrowing made necessary by the interruption of the flow of funds into the Exchequer. But the union spent over £9 million during the dispute. Union members received 85% of gross pay when taking part in selective strikes.

Robot project

THE Japanese government is to launch a multi-million-pound seven-year project to develop high intelligence robots for scientific, economic and social purposes.

Minister calls for more joint ventures with overseas firms

by Kevan Pearson

BRITISH electronics and computer companies need more joint ventures with overseas companies if they are to compete internationally, the Information Technology Minister, Kenneth Baker, told a London conference last week. But Sir Richard Cave, chairman of Thorn-EMI, questioned whether the British government is doing enough to encourage such moves.

Baker said: "None of the British IT companies is large in world terms, and to achieve the economies of scale necessary, British companies must enter more joint ventures and co-operative arrangements with companies abroad in order to do business on an international scale.

"There is no future in the British economy or the world economy by sinking into protectionism. We are a trading country and we need to survive by our capacity to buy and sell internationally."

The Minister was addressing the Financial Times World Electronics Conference.

Cave supported the Minister's call for more joint ventures. In particular he said that in his opinion joint ventures provided "the most acceptable format for major projects of direct investment by Japan in this country."

However, he criticised the government's efforts so far. "The question," he said, "is whether government in this country is doing enough in a positive sense to encourage joint venture solutions, particularly with Japanese companies."

Cave added that the reasons the government should adopt a more positive stance were that while the British market had proved lucrative as an export market for Japanese companies, there had been no reciprocation.

"Despite efforts to open it up, the Japanese market remains closed to the industrial exports of Britain. And no fixed investment is likely to get far in Japan if it is not undertaken in partnership with local Japanese interests."

He added that the government should be obliged to ensure that, when Japanese companies invested in the UK, it should be in the form of joint ventures so that local industry was helped by the investment.

He repeated the National Economic Development Office's call for a strong industrial policy for electronics.

Jean-Claude Hirel, Baker's counterpart in France's Industry Ministry, called for more collaboration between European countries. He said that out of the top 10 electronics and computer manufacturers, five were American, three Japanese and only two from Europe.

He added that unless European countries took a united stand, their information technology efforts could fail. Such a move, he said, would require a strong commitment from both industry and government.

BAKER . . . British companies must enter more joint ventures with foreign firms to compete internationally.

Hardware investment pays off

by Maggie McLoning

INVESTMENT of £1 million in hardware by Computer Management Group so that it could attack the lower-end IBM market appears to have paid off. In four months it has taken orders worth £750,000 for System 38 software, and £320,000 for System 34 development work.

"We have always been confident that our investment would pay, from discussions and work that we had done on IBM equipment before," said Chris Harrison, a director of CMG (UK). "System 38 was seen as a major area into which we could expand."

The orders have come from companies based in the UK and in Holland, and include software assistance to IBM UK for applications software conversion.

Conversion was cited as one of the major problem areas for new System 38 users by a recent Xephon user survey.

CMG became an IBM approved software supplier at the end of last year, under IBM's third party software scheme. CMG is now installing an £80,000 System 38 in its UK head office.

Data General joins the mini rush into micros

by Robert Parry

DATA GENERAL'S UK launch of its Enterprise microcomputer makes it the latest mini manufacturer to join the rush into upmarket micros.

FILMER . . . "Aimed at the slightly shell-shocked businessman."

Nearly a year after the machine appeared on the US market, it has reached dealers' shelves in this country complete with business application software from UK software house MPSL.

The 16-bit machines are aimed at the first-time user, the "slightly shell-shocked businessman with paperwork tying him down," says sales manager John Filmer. They are built round Data General's Micro Nova chip, and start with the floppy-based 64K RAM Enterprise 1000 for £4,950 including printer.

Winchester disc systems, the Enterprise 2000 and 3500 with five and 15 Mbytes respectively, are due in three months.

Sales will be through a network of dealers which is being set up by distributors Search Computers in Manchester and Coln Electronic Systems in Reading.

Three killed at IBM office

THREE men died, and three people are still in hospital, after a shooting at IBM's Bethesda offices in Maryland, US. Former IBM employee Edward Thomas Mann has been charged on the three counts of murder.

The motive for the May 28 shooting remains obscure. "Mann is a despondent ex-employee" said a spokesman for the Montgomery County police department.

According to Captain Hottinger, who managed the arrest, Mann drove his car through a plate glass door at the entrance to the building at around 11 am. A security guard there was killed, and subsequently in the building one more was killed and eight wounded. One of these has since died.

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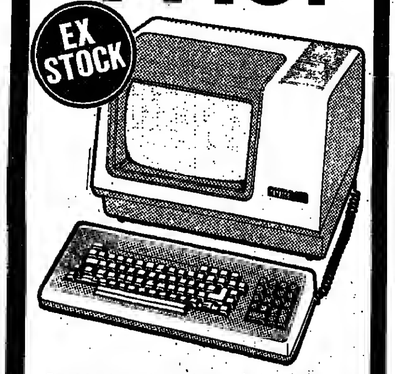

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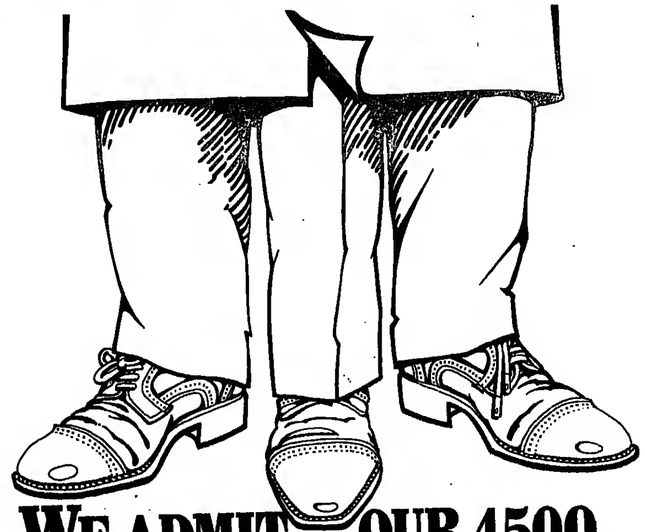

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BURY . . . Looking for a 16-bit replacement.

ACT beats slump with profits up 33%

by Kevan Pearson

BIRMINGHAM based bureau and micro house Applied Computer Techniques had a bumper year in 1981 despite the recession afflicting the West Midlands, where in some areas unemployment has reached 17%.

ACT's pre-tax profits rose by 33.6% to just over £1 million, compared with the previous year. Sales were almost £8.4 million, a rise of 17%.

The company is making a one for eight rights issue to finance additional growth, particularly the development of software for the 16-bit Sirius 1, for which ACT is sole UK distributor. The company has so far shipped or has orders for 2,000 Sirius machines.

There is one extraordinary item in the accounts. Almost £200,000 has been written off for the liquidation of its investment in Compu-Think, the company set up to make the Series 800. ACT will continue to sell the machine, and 500 units have been sold so far, but it is looking for a 16-bit replacement.

ACT is talking to Convergent Technologies of California, which makes the Intel 8088/8086-based machine which forms the basis of Burroughs' B20 small business system. Negotiations are continuing, according to ACT's chairman, Lindsay Bury, though Convergeot's price is too high, he adds.

Series 800 is marketed as a complete small business system, with networking facilities, so ACT is looking for a proven product to replace it in the burgeoning 16-bit market.

It has Sirius, which is 8088-based like the Convergent Technologies' machine, and Bury admits that Sirius could form the basis of a Series 800 replacement. But at the moment neither the software nor the networking facilities exist in a fully developed form.

And ACT's plans for the Sirius appear to be separate from its small business system activities. It has set up a subsidiary to handle the machine.

The company is not selling Sirius direct to the public at the moment, though it probably will in the longer term.

Intel to launch French components venture

by Jack Gee

INTEL is to launch an ambitious programme to manufacture advanced computer components in France. Production will be handled by Cimatel, Intel's joint venture with Matra and Harris.

Intel announced in Paris that it is in the process of defining with its partners a range of up to five components. The final choice will be made in 1983 and production will start shortly afterwards.

Barry Cox, Intel's European chief, said: "The key issue for us is to obtain from the new French government the right to sell our products freely to the data processing and telecommunications industries here."

Cox emphasised the experience of Matra in advanced technology. He contrasted it with that of recently nationalised Saint Gobain, with which Intel's negotiations for a co-operative arrangement filed before the Socialist administration took over in France a year ago.

Cox expressed confidence in Intel's 64K circuit and claimed that its high density memory was vastly superior to competitors.

He added: "We delivered 10 million of them last year and plan 60 million for this year and 200 million in 1983.

"Even if we were not the first in the field, we are well placed in this fast developing market which is only just beginning to take off."

Cox added: "We are not surrendering to the Japanese. They will remain our competitors. But we can co-exist. Our strategy is to improve our technology, innovate at a faster speed and to excel where the adversary is weak — that means in the variety of our products.

COX . . . No surrender to Japanese.

"While the Japanese concentrate on memories, we claim leadership in many other areas, notably in microcomputers, where there is no serious Japanese competition."

SPL move to establish a US market

by Sarah Hardcastle

IN a move to establish a market in the US, SPL International, the London systems and software house, has signed up Intelligent Industrial Systems Inc of Secaucus, New Jersey as its American agent.

As a first step, IIS will distribute two of SPL's most successful products, the RTL/2 high-level language and the Magic microcomputer software development package.

Announcing the development, Jim Fisher, managing director of SPL's research division said: "Our first target in the US will be the OEMs in the real time control systems market, designing controllers for industrial applications.

"The new generation control systems, employing 16- and 32-bit micros, call for a more flexible and cost-effective approach to software design. This is not being met by the fixed packages of Honeywell and Foxborough, the traditional suppliers of this market."

Confident of finding a large market for RTL/2, Fisher added: "The majority of US companies use Fortran and assembler for their real time projects. They are the kind of OEMs likely to turn to RTL/2 because of its security, simplicity and portability."

IIS, a computer consultancy and subsidiary of the $300 million NPS Corporation, was chosen, said Fisher, because the company has good control systems experience and is familiar with what is a classic RTL/2 market. Other SPL products would probably be distributed by IIS.

This (sort of) sporting life . . .

LAST week saw the first running of what promises to be a keen, not to say riotous, competition bringing together the sales people of Computer Weekly with the staff of recruitment consultancy Trident Computer Services.

Computer Weekly advertisement sales staff under the boisterous leadership of consultancies sales manager Chris Prier hosted the competition for the first Trideot trophy.

The prize was a cup which would not disgrace this year's World Cup finals, and was certainly bigger than FIFA's variety.

It was provided by Trideot's larger-than-life chairman John O'Sullivan, an old hand at the recruitment consultancy business.

The competition saw up to 25 people lovolved on each side and was spread over nioe events. It kicked off with mixed sexes five-a-side football in which a friendly knock-around quickly became a serious match, but ended with laurels shared at 4-4.

Likewise the squash, in which Computer Weekly's youthful telesales manager Shobhan Gajjar was outpaced by the older but fitter Mike Bull, managing director of Trident, before Trident's Keith Taylor weot dowo to Julian Bidlake in a tough match to leave the points all square.

From then on, dear reader, your reporter has to say that things went downhill. Gentle parlour games of dominoes and backgammon became displays of outrageous chauvinism on each side as the night's scorer, Peter Jezeph of Trident, attempted to ensure that justice was done.

With losses piling up against the home side it is with some reluctance that journalistic integrity also requires your reporter to record that Computer Weekly needed the beer drinking competition to pull itself back into the match.

And so to the darts. Secretaries Jean Goodman end Maureen Fraser starred on the Computer Weekly side while the accuracy of Trident's Neil E. Smith threatened to allow Trident to take home its own prizes.

In the end the unsteady hand but cool head of Computer Weekly classified advertisement manager Brian Durrant slotted home the crucial double to square the match.

Ao honourable draw to a more-or-less honourable competition.

SALES BRIEF

BNOC opts for Gould 32-bit minis

BRITISH National Oil Corporation has ordered two SEL 32/87 32-bit four million instruction per second minicomputers through oil industry software house Seiscom Delta Limited.

The systems, which include 300-Mbyte disc drives and tape drives, will run Seiscom's gaseis geophysical software modelling, interpretation, database management and graphics work.

Similar work is already done on BNOC's five-year-old SEL 32/...

Treasury link

SCICON Computer Services has won a contract to supply data communications equipment to the Central Statistical Office and Treasury to link 80 terminals to the Univac 1100/62 multiprocessor they share. The company will supply a Micom Micro 600 message switch selector and a CHI Corp face-to-face processor which is capable of linking the terminals in any one cluster to several different mainframe computers.

Oil agreement

ABERDEEN-BASED oil industry bureau and consultancy Aberdeen Computer Services has invested £200,000 Data General Nova 3/D 32-bit mini and signed an OEM agreement under which it will sell Data General hardware with its own software.

Cifer for BT

BRITISH TELECOM has ordered £500,000 worth of Cifer Systems 2683 Z80-based intelligent VDUs for the prepreparation of international telegrams and other telecmessages at its eight telemessage offices.

£5m orders

HAWKER Siddeley's industrial automation subsidiary Wedd Systems has won four orders worth a total of £5.4 million for computer-based control systems. The largest is for South Electricity Board's £3 million network control project; two others totalling £2.2 million are for orders to the New Zealand Ministry of Energy and Brunei Shell Petroleum; and the fourth is for Petroleum's pipelines from Fawley to West London, Purfleet and Thatcham.

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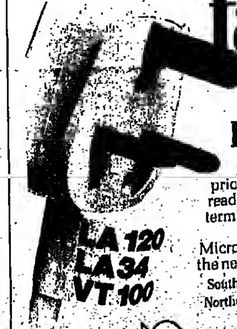

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Racal ventures into expert systems market

by Philip Hunter

COMMUNICATIONS company Racal has set up a new expert systems division.

Initially Racal will develop expert systems for the oil industry on a computer manufactured by Symbolics of the US. The Symbolics computer is distributed in the UK by Electronic Associates, the specialist suppliers of computer services for scientific applications.

After a cautious start in oil exploration, Racal expects to branch out into other applications for machine intelligence such as medicine. It also expects to develop portable software to run on general purpose machines, including the Digital Equipment VAX.

Racal will supply some general purpose software through licensing, as well as customised programs for specialist applications.

But in both cases the software will be tailored to a particular application, like oil exploration.

Expert systems consist of two components: a database of knowledge and an inference program to draw conclusions from it. Expert systems, a branch of machine intelligence, are largely a UK phenomenon. In the US, more effort has been dedicated to information systems that respond to simple English queries.

The pioneers of expert systems in the UK, Systems Programmers (SPL) and Intelligent Terminals (ITL), have taken a different approach from Racal.

Both these companies developed and now market general purpose expert systems generators which enable the user to build knowledge databases for any applications which need diagnoses from quantifiable information.

The machine that Racal will use, the Symbolics 3600, is dedicated to LISP and other languages developed in the US.

These languages require a lot of central processing power, and benefit from a large dedicated machine.

GAGNARD. . . . "We still intend to keep a fairly low profile."

Pansophic widens choice of programming aids for IBM users

by Maggie McLening

AN application development language which widens the choice of programming aids for IBM mainframe users has been introduced by Pansophic.

Called PRO/grammer, the product "bridges the gap between straightforward report generators and powerful programming languages", according to IBM system software specialists Pansophic.

Two main markets are predicted for the product: users of Pansophic's Easytrieve data retrieval package wishing to extend it into a complete application development tool; and Cobol and PL/I users looking for greater speed and efficiency.

Aimed at DP departments and not users, PRO/grammer includes such features as automatic and multiple report formatting, unlimited synchronised file processing, virtual file management, a macro system and debugging aids.

Operating on IBM 360/370, 303X and 4300 machines with on-line execution via TSO, ICCF and CMS, it is unlikely to tread on the toes of its potential main rival User Files Online (UFO), which is marketed in the UK by Fee and Systems Resources and runs under CICS. But Pansophic agrees that CICS is a logical future development.

Priced at £8,000 for the DOS version and £10,000 for OS, PRO/grammer is cheaper than UFO, which costs £11,500. But UFO has already established a formidable user base of some 550 installations spread over 20 countries, and its developer, Oxford Software Corporation of the US, recently collected an ICP award for sales worth $10 million.

The launch of PRO/grammer was timed to coincide with the arrival of Pansophic's new vice-president of European operations, Jim Gagnard, who will be permanently based in the UK. He outlined his plans for Pansophic in Europe.

"We still intend to keep a fairly low profile, while building up a marketing group in Europe," he said. "We're always looking for good agents and have so far appointed six in Greece, Israel, Sweden, Switzerland, Italy and Spain."

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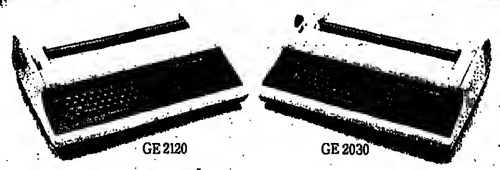

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NT 42

Seven more software products for Stratus

by Sarah Hardcastle

SEVEN new system software products for the Stratus failsafe computer system have been released. They give weight to the challenge Stratus is making in the UK to Tandem's and Computer Technology Ltd's non-stop computing systems.

British Olivetti is the UK agent for the Stratus CPS/32 continuous processing system. "We'll be going for Tandem's marketplace, which has broadened to include commercial applications as well as the traditional customer base of security conscious organisations" says Mike McDonald, British Olivetti's product manager for the CPS/32.

Apart from pricing the CPS/32 at "a little less than a comparable Tandem system", McDonald believes the Stratus system has the edge over Tandem on several counts.

"The failsafe re-start features are built into the hardware, unlike Tandem's which are held in software and require complex programming. Furthermore, should a component failure occur, it will be identified by the system's self-diagnostics enabling boards to be changed while the system is still running," says McDonald.

The new Stratus software includes: A transaction processing system with integral network support; a forms management system; a 3270 terminal support enabling IBM-compatible terminals to be connected to a CPS/32 and a 3270 emulator facility enabling application programs to access an IBM host.

The remaining products include an X-25 networking facility.

SHERMAN . . . "Rowe's reward."

Sirius link to CP/M software

by Robert Parry

A PLUG-IN board has been released which will give the ACT Sirius 1 microcomputer access to application software designed for the widely used CP/M operating system.

It comes from Small Systems Engineering, the London company that brought CP/M to the eight-bit Commodore Per with its Softbox.

With the Z80-based board installed in the machine, users can switch easily between CP/M-86, which runs 16-bit programs on the Sirius' own 8088 processor, and CP/M-80 for eight-bit software on the added Z80, says Small Systems' managing director Derek Rowe.

Small Systems Engineering developed the board and will be producing the first production units.

"This country will be Derek Rowe's reward for developing the board", says Ed Sherman, managing director of the computer's UK distributor, ACT (Sirius).

'Big companies not suited to electronic office'

by Kevan Pearson

LARGE companies are not suited to the rapid introduction of office automation, according to a report by London-based research company Euromonitor Publications.*

The report claims that large organisations are "too compartmentalised for rapid progress towards the electronic office to be achieved". It also criticises senior managers in large companies for failing to take the lead in the use of computer equipment in the office. A resistance to the use of keyboards comes in for particular criticism.

The report's findings go against the prevailing wisdom that large companies provide the ideal environment for the much-vaunted electronic office.

* Euromonitor Publications, 87 Lancaster Road, London W11 1QQ. Tel: 01-727 0842. Further details from Euromonitor Publications on 01-243 8042.

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THE NCC IN HOUSTON

Foreign firms' low-key stance at US show

THE best way to describe the National Computer Conference, America's one-time premier computer show, is to say that it was half the size of the Hanover Fair, and four times as noisy.

The NCC attracted 622 exhibitors, more than 90% of whom were American companies. The computer section of the Hanover event captured 1,200 companies. But the number of foreign exhibitors was what most distinguished the European event from the American.

There were 27 Japanese computer companies at Hanover, dominating an entire section of the huge conference halls.

In Houston, only five Japanese computer companies had a presence of any stature.

Panasonic focused its stand at NCC on a series of colour and monochrome visual display units aimed principally at US small system builders. It did not display the 16-bit micro which was such a central feature of its stand at Hanover.

Only one model of the Panasonic hand-held computer was on display, and given the current American interest in hand-held and portable computers, this product attracted the most interest.

Featured with the full 52K extended memory, the machine was shown in the briefcase display incorporating an acoustic coupler, dual colour thermal dot matrix printer and TV connector.

The entry price recommended by Panasonic is $600, with a full-blown model costing over $2,000.

The pricing contrasts with the Lexicon personal communications computer introduced by the Lexicon Corp of Miami, which costs some $995 complete with standard telephone connections.

Unlike the Panasonic mschine, the Lexicon's acoustic modem came in the form of two separate pieces – one to attach to the send part of a telephone, the other to the mouthpiece, with the modem electronics located in the device itself.

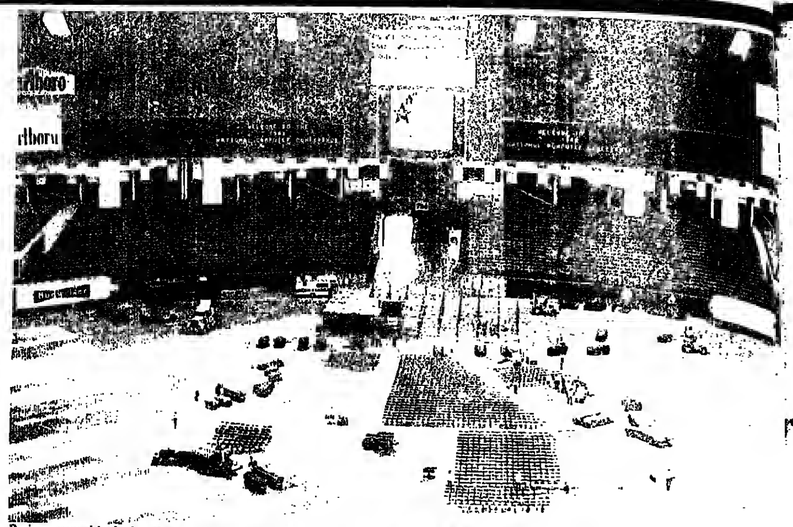
The Lexicon LEX 31 measures 10½in x 5¼in x 1¾in and weighs less than 2lb.

The importance of portable machines in America is vividly illustrated by the dramatic success of the Osborne 1 briefcase micro. It is expected to make Osborne the first computer company to go from zero to $100 million turnover in one year.

But the position of the native suppliers is under direct threat by the speed and success of such companies as Panasonic, and one of the principal after-NCC topics in places like Silicon Valley was just why the Japanese had chosen to take such an effectively low-key stance at the NCC in contrast to the aggressive style displayed at Hanover.

Nippon Electric Company, the Japanese firm with the largest established position in the US, showed a range of enhanced versions of the Astra small business system, and a series of American-made graphics packages running on the PC8000 personal computer. The speed at which American software companies have produced packages for the low-cost Japanese hardware now becoming increasingly available in the US, was a significant feature of the Japanese stands.

Staff at the NEC stand attributed NEC's $100 million revenues in 1981 to a substantial push from the US software industry.



Business as usual in the Astrodome at Houston, Texas. After the NCC comes Stevie Wonder in concert.

Nearly 100,000 see vast range of new products

"POWER to the end user" was the banner under which most exhibitors at this year's NCC united. Nearly 100,000 visitors came to see the variety of hardware, software and peripheral products gathered under the triangular roof of Houston's Astrohall, which sits next to the huge circular Astrodome, claimed by Texans to be the eighth wonder of the world.

As well as software to help you do-it-yourself, a deluge of graphics and colour-screen tools were launched, along with the inevitable contingent of new micros. There was no lack of new peripherals and discs – including innovative 9 inch discs and 3½ inch floppies – to support expanding user needs.

But it was not easy to extract a common theme from anything as big as NCC. "Confusion" might be one, with the plethora of micro products jostling one another in a market where the mainframe manufacturers were keeping quiet.

Crowd-pullers were the Grid flat-screen portable terminal, the Business Express database and applications system, and the Digital Equipment Rainbow personal computer.

Interest in operating systems and high-level languages was high, with the accent on ease of use.

But besides the now-familiar messages about easy use and low prices, there were more exciting discussions going on. NCC is a meeting of brainpower as much as marketing. While the products of last year's ideas were being pushed with less gimmicks than expected at such events, a lot of the innovators themselves were looking forward to the next generation.

Natural language and the gradually emerging results of artificial intelligence research were the most commonly discussed subjects among conference delegates at the more innovative exhibitors.

But in the realms of the commercially available, debate centred more on down-to-earth subjects like price, and whether the market was as eager to buy all those graphics and colour terminals as the industry seems to think.

In Houston, where the Astrodome dominates the NCC site as a monument to Thinking Big, the computer industry seemed to be concentrating on thinking small.

And the message is no longer that software is hoping to be the dominant feature of systems from now on – it evidently already is.

Meeting the needs of micro users

ONE of the most active aspects of NCC was disc and peripherals. As the microsoftware market continues to multiply, disc manufacturers are nipping in with a plethora of fixed, removable and floppy disc products to cater for expanding needs of micro users.

In a bid to keep its leading position in the peripherals market, Control Data announced seven new products at the show.

They include the CDC 9710 Removable Storage Disc, designed for use with mini and microcomputers, and CDC's first 5¼-inch Winchester disc, allowing storage of 19 million or 32 million bytes of storage. It is dubbed the Wren.

The 9710 caused a lot of interest, as many predicted that it would set new standards for the market. It is a 230 millimetre (9in) Removable Storage Drive (RSD), with a capacity of 82.9 million data bytes. It uses a front-loading data pack, the CDC 1209 containing three 230 millimetre discs. Data is recorded on the five data surfaces at a maximum bit density of 10,000 bits per inch with 542 tracks per inch.

Among the other CDC announcements were the 9715 Fixed Storage Drive, a high-capacity quarter-inch cartridge tape transport for data storage back-up of up to 50 Mbytes of data from Winchester discs, called the Sentinel 92190; and a new eight-inch fixed and removable 50 million byte disc in the Lark range, the 9457.

The company pointed to the shorter life cycle of disc products as the driving force behind its new interface policy. CDC is aiming to build more intelligence into its products under its Intelligent Standard Interface strategy, with the secondary aims of reducing costs, increasing reliability and supporting future developments.

Marketing chief Tom Camp spoke of the fierce competition, especially from the Japanese, as well as the shortening life cycle of disc products, as the main reasons for the new strategy.

Gemini launch

IN one of the few introductions of new software for the IBM Series 1 at NCC, Gemini Information Systems launched its database system. The DDQuery system is described as an expanded database system with report writer, transaction processor and query facilities.

Colourful way to win first-timers

MAJOR US software publisher Microsoft has embraced graphics and colour terminals as a way of winning further first-time users.

As well as the Xenix operating system, based on Western Electric's popular Unix, Microsoft was running Forward Technology's Gateway scientific workstation and graphics system on its stand at the NCC. The system is based on the Sun workstation, a Unix-based terminal which in turn owes a lot to the design concepts of Xerox's Smalltalk terminal. It allows great flexibility and manoeuvring on the screen as well as multiple displays of data.

"We don't think of it so much as just graphics," explained Xenix project leader Gordon Letwin. "What we're interested in is extending the use of Xenix to as wide an audience as possible. Putting this kind of capability with Xenix means that end users respond much better and can use the system more easily. To call it 'graphics' is too narrow a definition, as it is part of a much larger movement to improve end-user interfaces."

Letwin reported that Xenix was selling well in the US and that Microsoft was finding it able to keep up with orders.

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Reports by Claire Gooding and Kevin Cahill

'Top drawer' system an NCC sensation

IF any one product came close to causing a sensation at NCC, it was Grid's portable Compass computer.

The machine is about the size of a large coffee table book (11½in×15in×2in) and weighs 9½ pounds. It fits comfortably inside a briefcase or the top drawer of a desk.

Compass has a bubble memory, built-in modem, its own software, and an amazingly clear yellow-on-black graphics and character display. The screen is hinged to the middle of the box, and flips open to reveal a 57-key keyboard. There is also a telephone handset, connected by one of two modular jacks at the back of the unit, which allows voice communications. The other jack provides connection with the public telephone system for voice or data transmission.

The Compass machine has its own operating system and software. It is based on the 16-bit 8086 and eight bit 8087 microprocessor, with 256K of RAM and a further 256K of bubble memory.

There was a constant crowd around the demonstrations of the Compass, and even Clive Sinclair, who made a flying visit to NCC, had to admit he was impressed.

Compass and the Navigator system of which it forms a part is the brainchild of another British inventor, John Ellenby.

Ellenby started the Grid Corporation two years ago in the US, and insists that although the idea of the Compass was his, the teamwork behind the system was far more important.

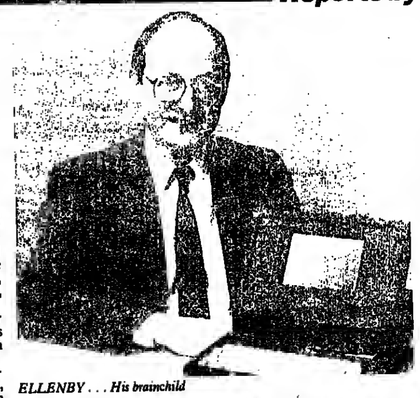
The market has been carefully evaluated by Ellenby, and those who predicted that the Compass would destroy Osboroe's not-so-portable microcomputer were missing the point.

Priced at $8,150, the Compass is hardly aimed at the micro home market. It is specifically aimed at the management market in the original sense of personal computing – a management tool which assists in decisions.

Grid conducted a careful survey of the Fortune 500 companies at which it is aiming its product. It discovered that managers held back from using computers because they could not access information when and where they needed it.

"We would prefer people to think of our systems as problem-solving kits rather than as great technological marvels", said Ellenby. "We find new areas of application every day. Next step is to add software for the IBM Series 1."

The Compass system uses a Unix-like file system, which can shrink or expand dynamically. All programs are menu-driven.



ELLENBY . . . His brainchild

Smalltalk grabs the attention

ANOTHER attention-grabber at NCC was the Xerox Smalltalk system, which made an unexpected appearance at one of the Xerox stands during the last days of the show.

Smalltalk lets the operator work with different sets of data on one screen, displaying various "windows" which mix graphics and text. It has been hailed as the way forward in small system operations since it does away with the constraints of working in exclusive work modes, allowing users to run several different jobs at the same time.

Xerox has adopted the system, originally used in research, as the basis for a commercial product, the Xerox 1100 Interlisp-D, which was demonstrated at NCC. As with many of the new products on show the emphasis was on the graphics and user interface.

User control is provided with a "mouse" – a hand-held operating control which controls a small arrow on the screen. This moves around opening up new "windows". But behind the impressive graphics lies a host of other development tools, which Xerox will be pushing as part of its entry to the small systems market.

Xerox does not plan to release the Smalltalk operating system generally however. "We've been using it for ten years or so in research," said the Xerox 1100 marketing manager Bob Boeneister. "The 1100 Interlisp-D will become available outside Xerox by the end of the year, but it will not be available for anyone else's machines."

Crowds also found another spectacular graphics terminal, the Forward Technology full-page system running on the Microsoft stand. The Forward Technology terminal works under the Microsoft Xenix operating system.

Program generator for multi-user environment

IT was difficult to move down any of the aisles of the NCC this year without coming across Yet Another Program Generator.

Program generators have become not just respectable but almost obligatory for any company wanting a go-ahead software image. One such, Business Express, was claiming to leapfrog the competition in both price and performance.

The Business Express system is a standalone system from the Systems Group, and was built from scratch for a busy multi-user environment.

The system can support about ten screens without sacrificing performance, partly because the software is written in assembly language for speed.

It works, as many applications generators do from a series of menus.

Priced between $4,000 and $6,000, the Business Express system is likely to find a large market as a standalone system without the help of CP/M and other popular operating systems.

Also on show was the British generator The Last One, its sensational campaign becoming somewhat tarnished by yet another launch. But like Business Express, it managed to bring a steady trickle of interest to the seminar room where visitors could play with the system.

Only on the final day of NCC did The Last One grab the attention from the competition. A last-minute link up with the Scott voice input kit allowed the generator to be put on show as a programming tool for the disabled, adaptable to any language. The voice-input system allowed manipulation of the menus by voice alone – an option which may well be open to other menu-driven systems.

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SOFTWARE FILE

ROWLAND . . . "User can write tasks to control different parts of the system as autonomous programs."

Blurring the lines between languages

by Maggie McLean

DIVIDING lines between programming languages may become increasingly blurred in the future as more specialist compilers are produced to combine the best features of each.

The most common reason for these hybrid languages is that scientific languages such as Pascal are now needed as part of factory automation or engineering systems. But they do not have the features essential in a wholly or partially commercial environment.

Parallel Pascal is one of the most recent cross-bred languages to appear. It was developed by consultant David Rowland for Interactive Technology Incorporated of Oregon, and is marketed exclusively in the UK by Unit-C, a newly-formed systems house specialising in factory automation.

"We needed to have a language that was both flexible and fully capable of all the features of Cobol and other commercial languages, but with extra features to control the hardware," explained Rowland.

Multi-tasking was one of the features required, which was impossible in a structured language such as Pascal, although Modula, developed by Niklaus Wirth, came close to the specification. Rowland took the concurrent language options from Modula and combined these with Pascal, further translating the code into PDP-11 assembler language to speed execution. Parallel Pascal is the result. He also intends to develop alternative code generators for running on other machines.

"Using Parallel Pascal, the user can write tasks to control different parts of the system as autonomous programs," said Rowland. "It also offers a circular buffer, so that the program can store characters if they are generated too fast for the screen."

MOSELEY . . . "Magus allows processing to be mirrored in software mode."

Alternative to non-stop systems

MUCH has been written about software selling hardware. But a new product from UK systems house CAP may do the reverse.

CAP's latest offering, Magus, provides a real time software environment to link DEC PDP-11 and VAX-11 minicomputers. Based on the Ministry of Defence software system design standard, Mascot, Magus effectively offers a cheaper alternative to non-stop systems from either Tandem or Computer Technology Ltd.

"Magus allows processing to be mirrored in software mode, rather than in the hardware, so that the user can implement systems requiring high reliability at the lowest price," explained Alun Moseley, project manager at CAP.

Depending on the application systems required, Magus costs about £7,000. If it is used to link two DEC PDP-11/44s, for example, it is possible to build a non-stop system for less than £80,000, Moseley says.

In addition to the non-stop capabilities, Magus offers an integrated set of utilities and development tools to aid programmer productivity, complete with standard diagnostic facilities for programs written in Coral, Fortran or "C". the language compiler used to write the Unix operating system. A "C" interface to Cubol is also to be provided.

"Ultimately I could see Magus running under Unix, but at the moment it sits on top of the RSX multiprocessor system," said Moseley. "Our objective was to remove development overheads inherent in real time, which cause slow response. Under Magus all operations are contained in one task, on the virtual machine principle."

CAP expects Magus to be used in applications such as large scale process monitoring and industrial plant control, high speed data acquisition systems and real time simulators.

'Piracy' exposed at Pet show

THIS year's Commodore Show exposed more than software packages that a dealer had bargained for, resulting in the enforced withdrawal of the products.

It was an example of "piracy at a distance". And while it also highlights only the games market, it highlights potential risks to other business software packages, many of which are sold with security protection.

Martin Maynard, managing director of Reading-based Audiogenic, was surprised to see several games for the Commodore Vic 20 including Alien 3 and Amok on display at the Commodore stand.

Maynard's company has extensive European distribution rights for the packages. On enquiry it was told that Arfon had bought the games from an American contact called Maurice Umberth, and that as far as Audiogenic knew the deal was all above board.

Fortunately Dave Libby, production manager of Commodore Microwave Industries, the company which developed the programs, was at the show and confirmed that similar European distribution rights had been sold to Audiogenic.

Arfon withdrew the products from sale, but only after several other dealers had bought them.

"There were also games from Commodore themselves," explained Maynard. "There is one called Blitz, which is the same as City Bomber sold in the States."

Lamberth, acting on behalf of the company called Visoft, had approached Audiogenic for sale of the programs in question a short time before the Pet Show, and had taken several away with him.

"He probably bought the software in the UK, then took it back to Australia to copy, or possibly even used the samples from Martin Maynard," said Linberg. "He couldn't possibly have bought it in the US because it wouldn't have been compatible."

Managing director of Arfon, Kerr Borland, was in the US and unavailable for comment, but sales manager Maldwyn Davies said he was aware that the games had been withdrawn.

"In the US we would definitely go to court, but as it is happening in the UK and Australia we will have to go through other people," said Linberg.

He added: "We have had other people sell our software illegally before, but not so blatantly — at least they bothered to change the names of the programs."

Audiogenic is also considering legal action against Arfon, before an injunction has yet been taken out.

SOFTWARE BRIEF

Boost for business graphics

RAPID growth of business graphics software in the UK is reflected in a spate of orders received by US-based Isco Graphics' subsidiary, Isco UK.

This month alone, orders have been placed by Lockheed, Standard Oil, Citibank, The Salk Institute for Biological Studies and Union Carbide, representing the US Department of Energy, for the DISSPLA and TELL-A-Graf packages.

Friendly Query

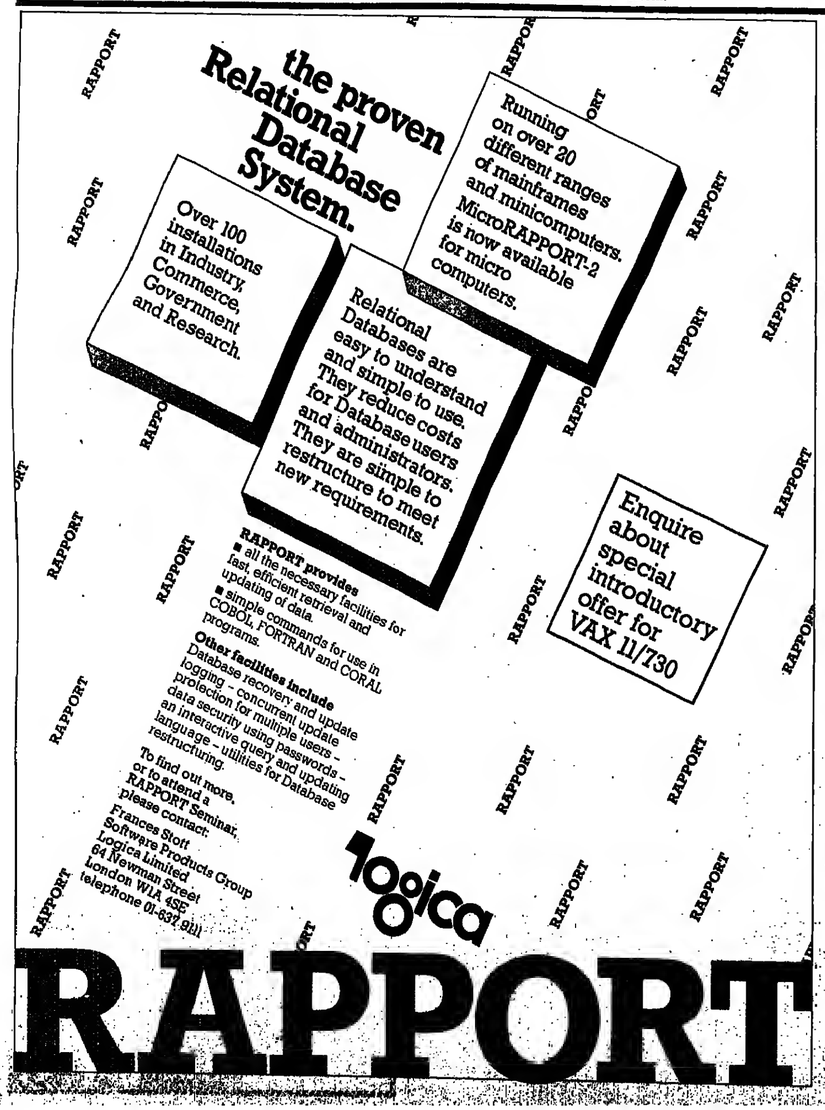
LEADING software house Altergo Software has launched an interactive Friendly Query System (FQS) to run under IBM's CICS/VS and its own Shadow teleprocessing systems. This follows the release of Allergo Business Systems' online general ledger system, Spectra, to run on the IBM System 34 machines.

Holding prices

A PORTFOLIO management system for investment brokers has been announced by Edinburgh-based Micro Facilities. Designed to run on Commodore 8032 or other microcomputers, Portfolio holds details of share prices, client details and cross references of the investments. The software costs £650.

NCR range

NCR is developing a range of accounting packages for use with its V-8500 series computers running under the Virtual Resource Executive (VRX) operating system. Over 20 orders have already been received for V-Accounting.



MICRO NEWS

by Robert Parry

Future Tech to promote Micro Five in UK

DESKTOP business microcomputers from US manufacturer Micro Five have found a new promoter in Lichfield-based Future Technology.

Micro Five was left without a UK distributor when Apple took over Microsense and associated company Data Efficiency stopped handling the range.

Since business started on April 1, the three directors — John Krushner, John Nash and Nick Flowerdew — have signed up eight of the existing Micro Five dealers and are looking to expand this number to about 30. One likely source is existing MPSL dealers, Flowerdew says.

"Up till now they've been stuck with eight-bit machines," he says, "and are wanting 16-bits." Micro Five's Series 3000, the high end machine Future Technology will market, runs MPSL's BOS/5 on an Intel 8086 processor.

CP/M-86 is also available on the Series 3000, although there is not that much application software around for it, Flowerdew says.

Compatibility key to Philips' uprating of PMDS system

ELECTRONICS giant Philips is to bring multi-user capability to its microcomputer development system. An uprated version, the PMDS II, uses the Motorola 68000 16-bit processor — second-sourced by Philips — and the Unix operating system to replace the proprietary processor and operating system used in the original 1979 machine.

Compatibility is a key part of Philips' philosophy, says Ken Wheeler, test and measurement division marketing manager in the UK. The new machine will run existing development software packages unchanged, and is compatible with current microprocessor adaptors. An upgrade kit to convert existing PMDS Is will be available at "an affordable price" — £4,000 — says Wheeler, and the earlier model will continue to be sold.

Philips expects customers to start with single user systems, costing £16,000 and deliveries will begin in November. A maximum seven users can be supported. Memory starts at 256K of RAM, expandable to one megabyte, and a five or 21 Mbyte Winchester. Six more discs can be attached, giving nearly 150 Mbytes. A system to fit the average working team — three users and 21 Mbytes of hard disc — will cost £22,000.

Wheeler says Tektronix and Hewlett-Packard are the competition among independent suppliers of "universal" microprocessor development systems which support chips from a variety of semiconductor manufacturers. Tektronix has already gone to a Unix-based system for its multi-user applications, and Wheeler expects HP to go the same way.

●While Philips is moving upwards in capability, semiconductor house Intel has extended its development system range downwards. It has announced a "personal" development system, iPDS, to be available early next year

WHEELER . . . "Compatibility a key part of Philips' philosophy."

Battle to set standard for new micro-floppy discs

THE battle to set the standard for the coming generation of micro-floppy discs continues. While the Hungarian three-inch system marketed by London-based BATSNCI gains momentum in the UK, another contender is scheduled to appear here in the next few months.

Hitachi, which developed a three-inch Compact Floppy Disc in conjunction with Hitachi Maxell and Matsushita Electric, is to market the system through its new Computer Products division in the UK. Pricing will be "very aggressive" which is taken to mean that the unit will cost less than 5¼-inch equivalents.

In the US six companies, headed by Shugart and Control Data, are attempting to set technical standards different from the Japanese systems available from Hitachi and from first-comer Sony. Sony unveiled its 3½-inch micro-floppy at last year's National Computer Conference in Chicago.

The pre-arranged standards by the US firms are seen by some as a move to relieve the Japanese grip on this new market. If so there could be the danger of an anti-trust challenge. Disc standards in the past have been derived from the first successful products, IBM's for 8-inch floppies and Shugart's for 5¼-inch drives, which were copied by other manufacturers.

The Sony design was boosted last month by a $40 million deal with Hewlett-Packard to buy discs for its office automation products. It is also starting to be built into Japanese microcomputers, including Sony's own as well as Sord's.

US disc drive manufacturer Tandon, which withdrew from the US alliance, is due to bring out a 3½-inch drive like Sony's this month.

IBM Japan has own Personal

THE Japanese arm of IBM plans to launch its own personal computer rather than market the Personal Computer from the US parent. The US machine's inability to cope with Japanese users' demands for a machine capable of handling Japanese language, is cited as the reason for the launch.

Hardware and software for the micro is under development at IBM Japan's Fujisawa Labs. But it is likely to be assembled by another Japanese computer builder as the company says it does not have enough facilities for small machines.

LEAR SIEGLER terminals - too smart to be called dumb

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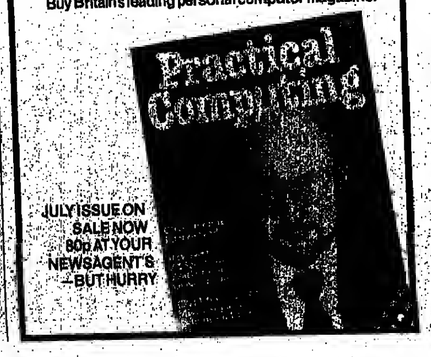

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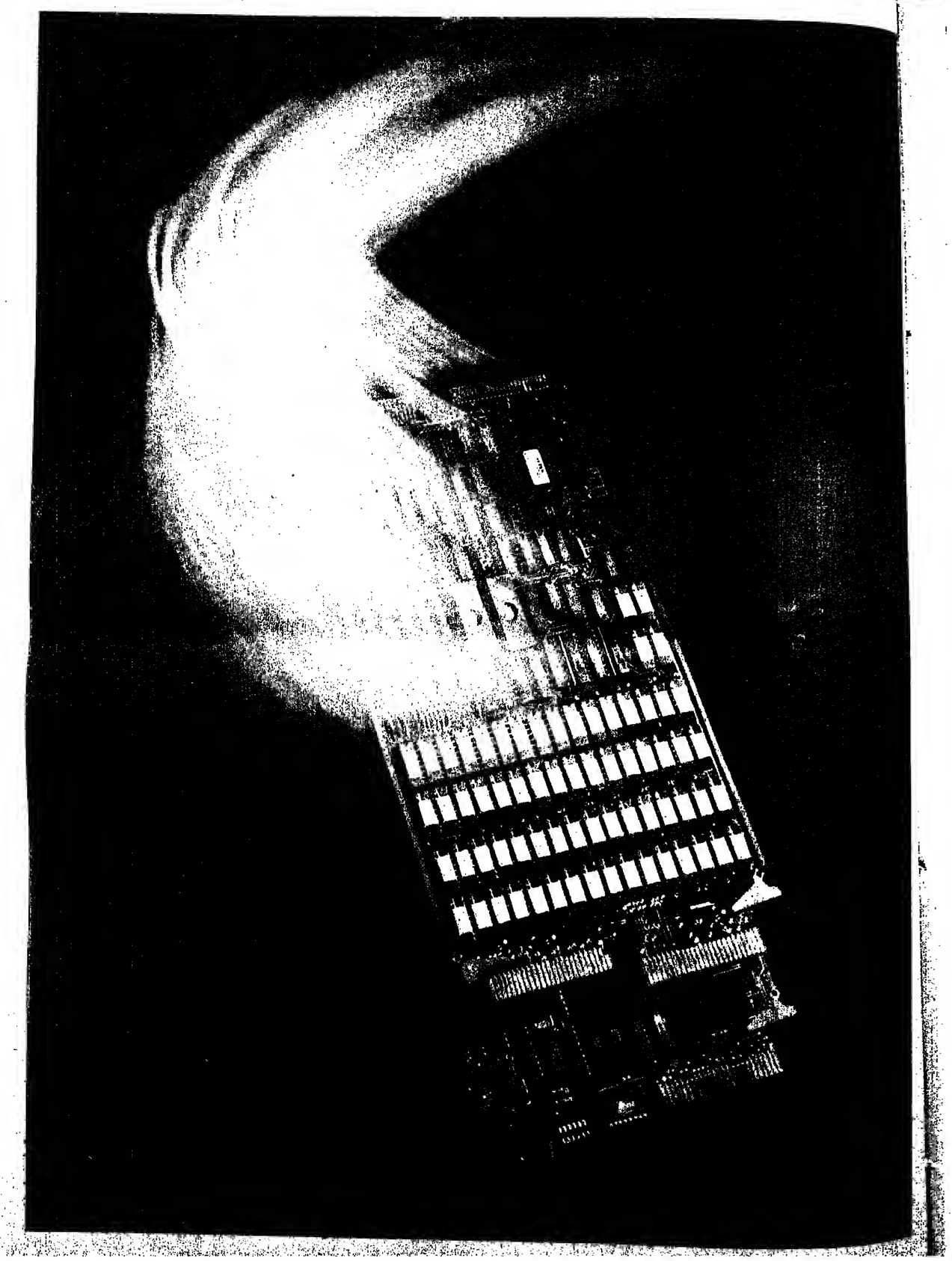

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COMPANY NEWS

Multi-million boom for the Commodore bosses

THE New York Stock Market valued Commodore International at about $450 million in recent trading. As owners of 27% of the stock, this makes chairman Irving Gould and executive vice-president Jack Tramiel each millionaires 60 times over – not bad going for men who started out with a typewriter assembly works 25 years ago.

Unlike the rest of the US semiconductor business, Commodore has been virtually doubling sales of its semiconductor devices each year since 1979, when it sold $10 million, through to last year when total sales came to $34 million.

Neil Goldman, an analyst at New York brokers Shearson American Express, forecasts that for 1982 Commodore will have total sales of $60 million for its proprietary chips.

Much of the success of the company's semiconductor division, and as a consequence, of Commodore's microcomputer division, centres on the 6502, an 8-bit microprocessor. Sales of the 6502 have now reached an annual rate of 20 million units.

Honeywell and Rockwell International both manufacture the 6502 under licence, and Commodore supplies the microprocessor from its own plants to game manufacturer Bally, Ohio Scientific, Hewlett-Packard and, in a smart reversal of roles, to Texas Instruments as well.

This year Tramiel and Gould are hoping to repeat the 6502's success with a new 16-bit micro which they claim will be smaller and cheaper than any other 16-bit device. And it looks likely that Commodore is ready to do the same in the 32-bit market.

At a recent interview Tramiel spoke of every microcomputer company getting ready to enter the 32-bit market.

He did not exclude his own company, though the Commodore technique is not to lead in technology, but to push existing devices, wrapped in new packages, into new marketplaces.

Tramiel also spoke of a new hand-held micro, possibly incorporating a megabit of memory, within 18 to 24 months.

This would bring Commodore right back into the calculator-sized device marketplace, which it abandoned two years ago.

Although analysts like Goldman describe Commodore as the only truly vertically integrated microcomputer company in the world, they overlook the potential role of new entrant DEC, which has a substantial in-house capacity to produce microprocessor chips, as indeed do several other companies which have recently begun to flex their muscles in the micro marketplace.

TRAMIEL . . . . . "Every company getting ready to enter 32-bit market."

But Commodore does have an unrivalled user base of 250,000 machines, most of them outside the US.

And while Tramiel admits that sales of the VIC 20 have fallen off in Japan, the company did sell 44,000 units there last year.

Legal snags delay NMW listing until autumn

NANTWICH-BASED NMW, one of the first computer companies to announce its intention to go public on the Stock Exchange's Unlisted Securities Market last year, looks like being left behind in the rush.

With three other computer companies including Knight Programming and Woklog-based CPU soon to list, NMW is faced with legal and other snags which will delay its placing until the autumn, according to chairman Brian Bibby.

NMW was set up in 1970 by a group of stockbrokers connected with the old Northern Stock Exchange at Manchester. The original shareholders hold voting stocks in about the proportion of one voting share for every 7,000 shares now in issue.

A condition of getting a listing, laid down by the Stock Exchange, was that NMW should enfranchise all its shares.

Although NMW has never raised any subsequent money from shareholders, and has improved the value of the founders' £250 to about £14,000, the founding shareholders have held out for something in return for losing the exclusiveness of their votes.

The board of NMW has finally reached agreement with the founding shareholders by offering a free issue of one share for every eight voting shares currently held. But the price has been high. Transactions in NMW shares were halted for nearly two months.

NMW's bid to buy a microprocessor company to begin mass production of its own intelligent terminal has been abandoned.

The public listing of the stock will not take place until nearly a year later than originally planned.

Hitachi misses its targets

by Kevin Ca

JAPAN'S No 2 manufacturer of IBM plug-compatible computers, Hitachi, has fallen short of expectations for profits and sales. It has reported sales of $9 billion, with profits of $282 million for the year ended March 31. Profits were up 8% and sales 16%. Both figures are much smaller than those recently released by Fujitsu and Nippon Electric.

The growth of sales and profits is out of line with Hitachi's own targets of 15% and 16.5%.

The slower than expected growth probably stems from Hitachi's continuing pressures, depressed consumer and industrial electrical goods sectors.

The company reported substantial rises in sales of computers, microchips and video recorders. It is Hitachi's aggressive drive in 64K RAMs which has led to it obtaining a dominant share in the marketplace, with consequent concern among rival US semiconductor companies.

So far Hitachi has avoided responding to American pressures and sales of the company's semiconductor products have risen 25%, in a year which has seen major US producers glad to have held on to previous year's sales volumes.

Micro Scope up 315%

A RAY of light in the recession comes from Maidenhead-based systems house Micro Scope.

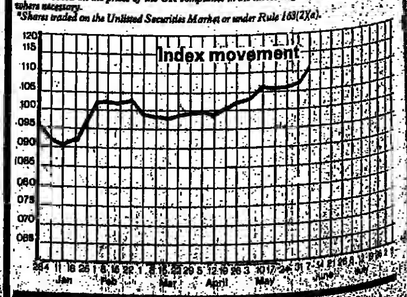
Turnover for the first nine months of this year to the end of April is up 315% on 1981, at £545,243. According to managing director Chris Seeley there has been substantial growth in all areas of the company's business.

CW SHARES TABLE

Date 11/6/82 Index 110.46 Down 0.9

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence Chge	$ 1982 High	$ 1982 Low	US Stock Stock	$ Price	$ Chge
196	160	ACT (Ann Comm) (25p)	196	+ 7	29½	18¾	Amdahl	18¾	
175	130	ADC Int (25p)	175	+ 5	26	13¾	Apple Inc	23¾	+ ¼
270	18	B. Bow Kent (25p)	37½	+ ½	39	23¾	Auto Data Pro	35¾	
121	101	Chubb (50p)	117	+ 8	21	15¾	Burroughs	20¾	
84	48	Coda Group (25p)	84	+ 25	13¼	7¾	Comp Auto	12¾	
2025	2250	C.A.S.E. (50p)	2025	+ 25	32	18	Comp Sciences	31¾	
350	227	De La Rue (25p)	350	+ 2	18½	11¾	Comshare	18¾	
260	206	Dowty (25p)	260	+ 12	26½	17¾	Cooper Inds	26¾	
270	205	Ferranti (50p)	270	+ 2	27½	21¾	Dun Bradstreet	27¾	
77	57	FII Group	77	+ 1	12¾	7¾	Data General	12¾	
42	32	GEC (25p)	42	+ 1	7¾	4¾	Datapoint	7¾	
61	46	Gen Scanning (10p)	61	+ 1	9¾	6¾	Digital Equip	9¾	
318	225	Lucas Ind (25p)	318	+ 10	47½	31¾	Diversified Inds	47¾	
210	158	Marconi (25p)	210	+ 2	31¾	23¾	Du Pont Co	31¾	
150	118	Micro Focus (10p)	150		23¾	15¾	Gen Automation	23¾	
285	215	Normalair (1981) (5.0p)	285	+ 4	43¾	29¾	Gerber	43¾	
283	210	Racal (25p)	283	+ 3	43¾	29¾	Hewlett-Packard	43¾	
260	205	Smiths Ind (25p)	260	+ 5	39¾	29¾	Honeywell	39¾	
488	346	Thorn EMI (25p)	488	+ 23	73¾	49¾	IBM	73¾	
68	56	Vickers Auto (10p)	68		9¾	7¾	Intel	9¾	
420	301	Racal Strat (10p)	420	+ 14	63¾	43¾	Intel (Siemens Sh)	63¾	
280	171	Redifon (25p)	280	+ 5	43¾	25¾	Memorex	43¾	
468	416	Thorn EMI (25p)	468	+ 18	71¾	63¾	Memorex Assist	71¾	
80	74	UCRT (50p)	74		11¾	11¾	Micom	11¾	
		OTHER MARKETS*					Micro Int	11¾	
80	62	Sue Comm (10p)	80	- 1	12¾	9¾	Motorola	12¾	
465	416	Comp Secs (£1)	461½	- 18	71¾	63¾	National Semi	71¾	
200	118	Comwell (CAP) (10p)	118	+ 18	18¾	11¾	Norsk Data	18¾	
265	246	Hi Tech (50p)	247		39¾	39¾	Perkin-Elmer	39¾	
131	115	Micro 2000 (10p)	115	- 6	19¾	19¾	Prime	19¾	
170	122½	NMW (£1)	126½	- ½	19¾	19¾	Raytheon	19¾	
43	43	Scott & Nichols (10p)	43	+ 22	6¾	6¾	Sperry Corp	6¾	
130	78	Sumlock (10p)	130		19¾	11¾	Sperry Univac	19¾	
210	190	[illegible] (10p)	210		31¾	31¾	Tandem	31¾	
108	96	[illegible] (10p)	96	- 1	15¾	15¾	Texas Inst	15¾	
106	78	[illegible]	100	+ 8	15¾	11¾	Wang Lab B	15¾	
							Wang Lab A	15¾	
							Wyly	7¾	

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.
**Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



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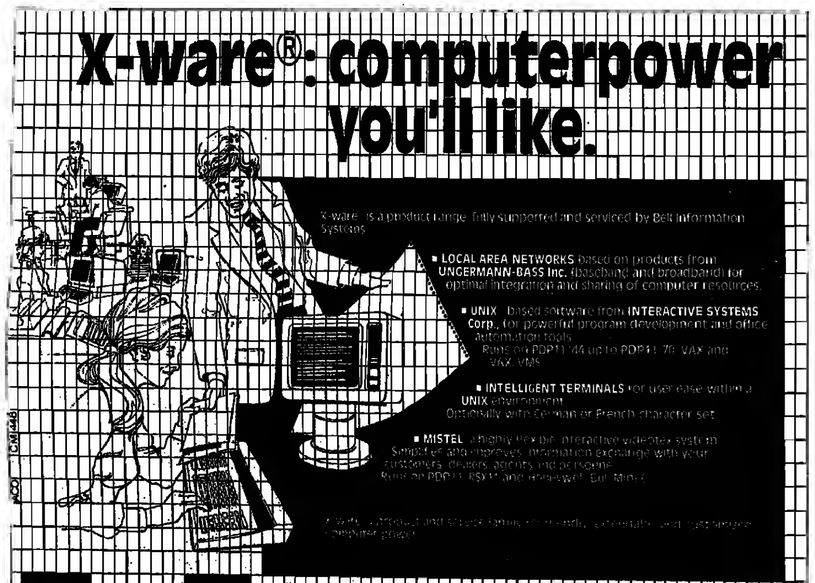

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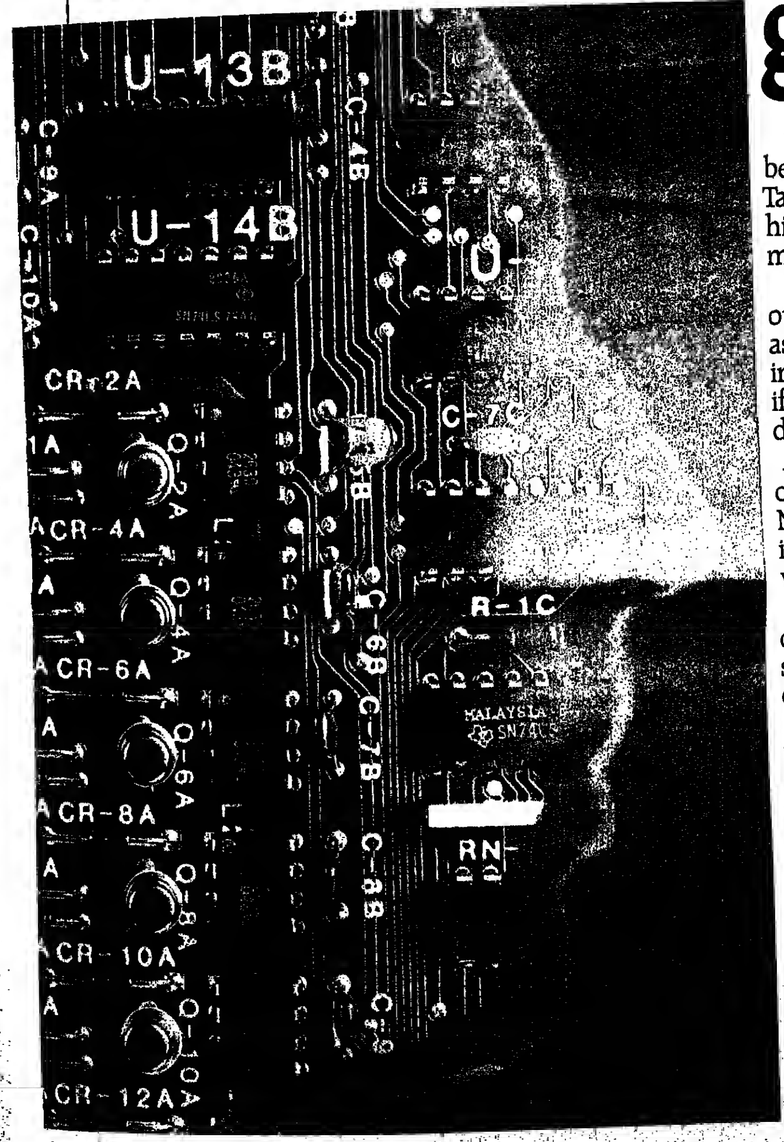

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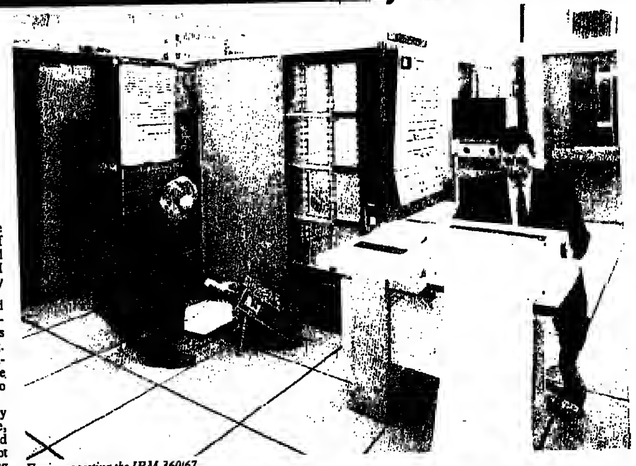
OP SPOT

Cheshire firm hits on a scheme to cut 25% from maintenance costs

by Andrew Thomas



Engineers testing the IBM 360/67.

IF I were to tell you that you could have the same IBM engineering cover as you are getting now, with the same IBM engineers and genuine IBM spares, but for 25% less costs, you would either not believe me, or ask "Where do I sign?"

Over the last nine months, Cheshire-based Mainstay has attracted over 50 IBM users, mostly small systems division sites, away from direct IBM servicing to its own, cheaper, alternative.

How do they do it? And where's the catch?

To explain how the cost savings can be made requires some background knowledge of how IBM's maintenance works.

There are basically three courses of action open to IBM customers when it comes to maintenance contracts.

Firstly, normal maintenance. For a price – and a pretty big one at that – IBM will supply whatever spares are required, and provide as many hours of engineers' time as are needed to resolve any problems.

The second alternative available from IBM is time and material cover. In this case, for a substantially reduced fee, the same spares and engineers are supplied, but the customer has to pay for the parts and the engineers' time.

Thus the customer must decide whether to risk the failure of a particular machine against the cost saving involved in opting for T&M. As some IBM hardware is considerably more reliable than others, it may be possible to have full cover on devices likely to fail, and T&M on the more resilient kit.

The third choice open to the IBM user is to use a third party maintenance operation, which can either be very good or terrible. In the worst instances, customers have been charged for complete power supplies and six hours of engineers' time when the actual fault was simply a blown fuse. (I was told this by an ex-third party engineer.)

Another problem with third party maintainers is that you cannot always be sure that the spares you are getting are the real thing. At least you know what you're getting when you use spares from the manufacturer itself, even if they do cost more.

Assuming that you want to stay with IBM's own maintenance, rather than going outside, and want to save money, but are not prepared to run the risk of going completely T&M, what course of action is open to you?

If a company were to take out an insurance policy, underwritten at Lloyd's, which covered the risk of having to pay out for engineers' time and the cost of spares – incidentally, IBM charges the full list price for parts and does not take the defective units back for refurbishment under any form of exchange agreement – considerable savings could be made.

This is the basis for Mainstay's operation. The site maintenance agreement with IBM is terminated, and Mainstay itself contracts with the manufacturer for a T&M service. The insurance covers any charges for time or parts. The service to the user appears unchanged, but the cost reduction can exceed 25%.

Another benefit to the user is that preventative maintenance can be carried out at any time chosen, with no extra charge for out of hours working.

In addition, Mainstay's prices are fixed for 12 months from the date of agreement – any increase in IBM's prices is covered by the insurance, and the company also handles the bulk of the administration of maintenance, as engineering invoices are notoriously complicated.

Geoff Henderson, one of the men behind Mainstay, says: "The customer saves, we make a bit, and IBM takes a bit less than before.

"Most of our customers are the smaller sites at the moment. They tend to make quicker decisions and are more cost-conscious than large installations. Now we've got the numbers, we're going for the bigger customers."

Most cost-reduction exercises mean a proportionate increase in risk, but with the customer getting the same IBM cover and the same IBM spares, installed by the same IBM engineers, but for three-quarters of the price (or less – sites with more than three processors get special terms), I certainly can't see where any additional risk enters the equation.

My only concern is that I didn't have the idea first.

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Service takes heat off computer room crisis

THE trouble with air conditioning in computer rooms is that the heat output of the original equipment is unlikely to remain unchanged as extra hardware is added. After a major upheaval, such as moving to a different vendor, it is likely that the original air conditioning unit will be unable to cope with the extra load.

Many machine rooms are equipped with extra, free-standing fans which stir up the air and provide extra help to the struggling fixed plant, but such measures are rarely effective.

Help is at hand, however, in the form of Maplin Mechanical Services.

Maplin has launched a hire-an-air-conditioning-unit service which costs between £4 and £5 a week. The portable units can be installed without having to alter the building, and provide cooling of between 5,600 and 14,000 Btu/hour. (As a rough guide, 8,000 Btu/hour is sufficient to control the humidity and temperature of a 1,600 cubic foot room.)

The smaller units in the range are self-contained, and use a small flexible hose for the disposal of hot, humid air to the outside of the building. Topping up a water container and plugging into a nearby mains outlet satisfies all the requirements of the device.

The units are claimed to be quiet and unobtrusive in operation and as simple to operate as a domestic freezer. They may be bought outright for those who do not wish to rent.

One obvious application is for standby use in the event of failure of the main plant. Details from Maplin Mechanical Services, 1426 London Road, Leigh on Sea, Essex SS9 2UL. Tel: (0702) 79933.

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GILB'S MYTHODOLOGY

Principles of Infotecture – 5

All techniques have good and bad side-effects

Tom Gilb is an independent consultant, lecturer and author on computing topics.

THE fifth Principle of Infotecture states that: "A single technique will inevitably affect several critical attributes of the system at once. Some of these effects will be planned and desirable. Some effects, however, will be unplanned and undesirable."

Side-effects are often disregarded through simple ignorance. This ignorance is sometimes encouraged by "idea salesmen". They do not want to "complicate" our evaluation of their pet technique by bringing in negative aspects of their ideas.

Gerald Weinberg once defined an "expert" as someone who could also tell you "at least three bad things about their favourite technology". I think you will find that this is a useful and simple test of the source of ideas.

It is our responsibility to explore systematically all critical attributes of design solutions.

It is not enough to expect technical specialists to do so of their own accord. My experience is that technical experts are often unsystematic in exploring the possible negative side-effects of the new and untried technologies which they are considering.

Management must take the initiative in setting a framework for systematic consideration of the dangers of new technology.

Here is a list of suggestions for approaching the problem from a management angle:

- Make sure that all critical system attributes are well defined – this means in measurable terms.
- Make sure that all technological elements of the solution are evaluated against the complete list of your critical attributes.
- Do not hesitate to demand written and contract guarantees from commercial suppliers regarding these critical attributes, as they will be in your planned environment. If they won't, you shouldn't!
- Insist on early paper evaluation techniques which evaluate the cumulative effect of all critical attributes. They will not give perfect answers, but they can give early warning signals.
- Insist on regular quality control techniques on all aspects of system design and specification. This is the cheapest and most effective defence against human imperfection. Highly recommended is the Fagan/IBM Inspection method.
- Finally, do not imagine for a moment that if you follow all this advice you are safe enough to take a chance on implementing a major system based on all this theoretical evaluation. You still need pilot tests, experiments and cautious commitment to implementation.

> **I find it professionally rewarding to examine the dead or very sick projects which are foisted upon the world by technologists and which are not well organised by their management.**

I will invariably design a system for early evolutionary delivery in many small steps (about 501).

I am a systems pathologist. This means that I find it professionally rewarding to examine the dead or very sick projects which are foisted upon the world by technologists and which are not well organised by their management.

Invariably, I find that behind the failure is at least one critical attribute that was never under proper control. In fact most of the above basic common-sense rules of caution in s complex environment, were brokeo.

Fools still rush in, where angels fear to tread . . . even with computers. Be an angel!

Tom Gilb

FOCUS

Coming to terms with some of the strange names in computing

AT a time when computer companies are competing to offer fully integrated products, services and technology, little or no attention is being devoted to the integration of computer terminology.

Even the leading IT Year organisera would find it difficult to distinguish between such technical trade terms as teletex, teletext, telex and videotext.

While the computer industry was in the main limited to a select body of professionals, many of whom were fully qualified members of the British Computer Society or the Institute of Data Processing Management Association, all was well. Interfacing was more a matter of being in the DP club or conference halls.

Only last month the managing director of Digital Equipment UK told a formal meeting of DP men that he would answer certain questions "offline". No one was in any doubt as to what was meant.

Similarly, the computer hobby freaks are quite capable of understanding what microcomputing is all about. For them Flips, Flops, and Floppies, Apples and Pets are meaningful terms. Such names as Bats, Bugs, Sorcerer, SuperSoft and Quicksilva inspire much collective confidence.

Meanwhile, equal levels of confidence are bestowed on the traditional DP market by such alpha configurations as DEC, NCR, IBM, NCC and CSA. Just how IBM, and more recently Digital Equipment, can hope to break into the personal micro club world without a name change is oo doubt a matter which is occupying their respective sales management. Certainly, had the new DEC Rainbow micro been named the DEC Bug, sales in all probability would have exceeded even those of the BBC Acorn.

A new national business equipmeot survey reveals that many small and mediuni-sized companies are totally confused by the electronic office marketing jargun. For the potential customer, integration is what the office manager expects of his team; the receptionist is expected to show integrity in forwarding all messages, the sales team integrity in their marketing approach and company management in dealing with salaries and promotion.

Transferring such terms to s collection of electronic office equipment often stretches the office manager's imagination and patience to breaking point, with the result that many meaningful office of the future integration plans are broken off. According to the survey, over 60% of small organisations have serious reservauons as to the introduction of computer systems which involve communication technology.

Even more emphatic was the finding in relation to possible hidden costs and hidden meanings of technological terms. "The marketplace is all too often confused by manufacturers' jargon and technology issues," the report states. The survey discovered that only 18% of small companies, for example, are familiar with the term "system networks".

Unfortunately, the technology jargon factor does not appear to have crossed the collective minds of the IT Year orgeaisers. The prime mission seems to be remove horse race meetings or ministe Minister Kenneth Baker o opening yet more robotic factories.

Devotiog some of the energies and resources into producing Users' Guide to Office Automatio for mass and free circulation woul be of more value than any numbe of micro trains and vans trundlin around Crewe and Coventry sid ings.

The first entry in the IT Alt Gtide would be Basic. This terms instantly recognised by the IB industry as a program langua User management, meanwhile, identify thc term as a down-to-earth, oo frills package, while th average high street micro salesm sees it ss a term denoting value f money.

In all probability, office workers confuse Basic with the latest head-banging rock group.

Such sinister terms as Ethernet, Ascii, ROM, RAM, LSI, I/O and ZX82 should be confined to the BIN and replaced by more user-friendly names.

It is time that basic simplicity returned to the DP marketplace. Without friendly help and assistance, there could be few users available than the industry is forecasting.

Alan Simpson

10 YEARS AGO

From Computer Weekly of June 15, 1972

UNIVAC announced plans to invest about £10 million in a new office and computer complex at Hanger Lane, North London, emphasising its faith in the UK as the world centre for software development . . . In a move to prod the government into making its long-awaited announcement over the future of the UK computer industry, ICL withheld publication of its interim report to shareholders for several weeks ... Contract negotiations were now completioo between Computer Techoology Ltd and the Computer Board for the provision of eight Satellite One Model 10 terminal systems for eight universities in the South of England.

HUMAN TOUCH

Controlling the accounts

Cliff Dilloway is an independent consultant specialising in accounting software, taxation and payroll.

A LEDGER may be considered subsidiary to another ledger. Almost always sales and purchase ledgers are subsidiary to the general ledger. Every ledger, whether subsidiary or oot, must be self-balancing in that over the ledger the debits must equal the credits. This objective is achieved by use of control accounts.

Every credit posted to a subsidiary ledger is also posted to that subsidiary ledger's control account in the general ledger. The same happens for debits. The control account in the general ledger stands in the place of all the accounts in the subsidiary ledger.

The control account is "within the trial balance" of the general ledger and ensures that all its debits equals all its credits.

There is also a control account in the subsidiary ledger. Credits posted to the subsidiary ledgers control account in the general ledger are posted as debits in the control account in the subsidiary ledger, and vice versa. The control account within the subsidiary ledger is within the subsidiary ledger's trial balance aod ensures that over the subsidiary ledger as a whole the debits equal the credits.

In accounting machioe systems the control account ln the subsidiary ledger is usually referred to as the control card.

The principle of double entry is preserved by the use of two separate control accounts in the general and subsidiary ledgers. The debits to one are posted as credits to the other and vice versa. In computerised systems this is done automatically.

Subsidiary ledgers are used to record practice transactions that span a general and subsidiary ledger require the generation of a matching pair of debit and credit entries for the cootrol accounts.

For example, sales invoices may be credited in total to a "sales made" account in the general ledger and debited individually to customers' accounts in the (subsidiary) sales ledger. Matching entries are required to debit the subsidiary (sales) ledger's control account in the general ledger and credit the control account in the subsidiary (sales) ledger.

Subsidiary ledgers only exist for convenience. The convenience is obvious in manual and accoucting machine systems. The convenience persists in computerised accounting systems on account of the different types of supporting detail required by different ledgers e.g. sales – open item, purchases – balance forward and general – payroll balances.

Cliff Dilloway

DOWNTIME

Talking of machines . . .

THE saloon bar of the *Dog and Bucket* is often witness to statements of earth-shattering import. Only yesterdsy, I joined in a conversation regarding the merits of speech recognition and synthesis units.

"My recognition unit can identify six words accurately," ventured one.

"My synthesiser can speak pretty good English," retorted the other.

I could oot resist the obvious question.

"Can the speecb recognition unit recognise what the speech synthesiser is saying?"

"Of course it cao, in fact it would be easier than human speech because it is so rigidly formatted."

And then it hit me – a blioding flash of cathartic insight. I saw the future of man/machine communicatiou. If a speecb recognition unit can truly recognise 100% of the output from a speech synthesiser, then all that is needed is a reliable means of inputting the data to the syntheaiser.

The ideal device is already available: the qwerty keyboard.

Computer language

THOSE strong-willed enough to read this columo on a regular basis will be aware that I take delight in exposing the foibies of other users of the English language. What can all too easily occur should proof reading fail below the required standard can be purchased on a daily basis in the *Grauniad*.

But on this occasion, the offending publication is none other than that most respected of organs, the *Financial Times*. In a story on Prestel, the FT included a typographical error transforming the words "Computer memory" to "Computer Momery".

The appearance of this last word started the wheels grinding in the famous Chad vocabulary. Momery, ah yes . . . Spencer used "momo" to describe a blockhead or buffoon. Momery – a collection of blockheads or buffoons.

No wonder Prestel hasn't daiight on.

Customs checkmate

IT has often been claimed that chess-playing programs have spawned major developments in the field of computer science. Someone in the US government has obviously been listening to these stories, for Bell Laboratories' chess-playing computer has been impounded by Customs officials on the grounds that, should it be allowed to travel to an International Chess Exhibition in Moscow, the Russians might be able to learn military secrets.

First-class results at ICL

THINGS seem to be looking up for silling computer giant ICL. Incidentally, one wonders how long the "silling" tag will be applied to Robb Wilmot's merry band, and if the "giant" reference should not be dispensed with in view of the somewhat reduced workforce. But I digress.

I refer to a change encountered while waiting for a train, with one of my erstwhile colleagues at the above-mentioned company. As the train arrived, he announced that he was travelling first class, while I was slumming it in second.

In my day, you were lucky to get seat by Red Star.

Housing the Seawolf

AN in-depth report appeared in one of our better quality oational dailies on the pride of Britain's Navy, the Seawolf guided missile system.

This bane of coemy aircraft automatically detects any object approaching the ship in an intercept course, and will shoot it down without human intervention unless a large red button is pressed to inform the system that the aircraft is friendly.

The description of the Seawolf concludes with a description of the computers required to control it – seven computers, which take up "as much room as the average house".

Ah, those were the days.

Sentimental scientist

WHAT makes someone buy a particular make and model of computer? Price/performance ratios? Availability? Bribery?

An academic at one of Britain's leading universities had worked for years in close proximity to a PDP-8 which was due for retirement. Faced with the loss of his favourite machine, and its replacement with a new-fangled, go-faster one, the gentleman in question took the only action possible in the circumstances – he bought the machine from the university for his own use.

"I bought it because I liked it," he admitted unashamedly.

One wonders how many of today's machines will be held in such high regard when their turn in the car-crusher arrives.

Their forte?

WHEN I mentioned the Burroughs entry into the microcomputer market to a colleague the other day, he found the temerity to suggest that this was an area to which the company was ideally suited.

Fearing that I might regret inquiring into his reasons for this statement, I nobetheless asked.

My worst fears were indeed confirmed when he replied: "They're hardly noted for the excellence of their engineering support, so they ought to feel at home with microcomputers – no one expects them to be supported."

Oh brave new world, that has such cynics in it.

Chris

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, June 17, 1982

A world North of Watford

DOMINATED by foreign manufacturers, the UK computer industry teods to lose sight of the fact that there is a world North of Wstford.

The lure of capitals like London, Paris and Amsterdam is powerful for internstiooals and multinationals. Not only do they offer the highest concentration in terms of market share, but also in prestige.

London's centripetal tendencies have been a cause of coocero for successive post-war governmeots. Each has looked on in dismay as the traditional industries in the Midlands aod the North have come under siege, and people have flocked to the South in searcb of jobs.

Most companies whicb could belp stop the flow by developiog their operations in the depressed areas have been reluctant to take the risk.

The present government is attempting to tackle the structural problems of the UK economy by concentrating its resources on strategic industries, including computing and microelectronics. It has recognised that any programme to achieve its sims must be implemented throughout the country. The South remains relatively unscathed by the burgeoning uoemploymeot figures, although even the South has no cause for complacency.

□ □ □

To take one example, a regiooal breakdown of the figures for offers of grants under the government's Microprocessor Applicstions Project, given in the Commons recently by Under Secretary of State for Industry John Butcher, shows that Londoo and the South-east still get the lion's share of the mooey – more than one-third. Depressed areas like Northern Ireland and Wales sbare a paltry five per cent between them.

The government is wont to explain this unequal treatment by saying it can only provide assistance to companies whicb put forward workable projects. In practice companies already based in the South tend to get the boost, which only exacerbates the structural problems the country is facing.

There are, of course, many notable exceptions. Some companies have carved out market niches for themselves in the North, as evideoced by the growing number of exhibitors at Computer Weekly's Compec North show, to be held next week in Manchester.

But such companies must feel increasingly worried by the deteriorating market conditions whicb sooner or later will bave a knock-oo effect on the demand for their products and services. It is not sufficient for the government to send travelling "awareoess" shows around the couotry, while dogmatically sticking to its rigid "market forces" ideology.

□ □ □

Last week Ioformatioo Technology Minister Kenneth Baker called for more joint ventures with overseas companies so that they are able to compete internationally. Behind his rallying cry is the belief that British companies must look to export markets for their future prosperity.

It is a message that has been given before, but it deserves to be repeated. The computer industry moves too fast for any high technology company, however small, to rest oo the security of what it thinks is a secure local market.

But companies in the North, many of which are suffering as it is from huge staff lay-offs and a shortage of investmeot cash, may not be in the best positioo to mount effective export drives.

Governmeots usually do their thinking oo a grand scale. Iodeed, they are expected to. But enterprise on a small scale, in the North as well as other parts of the country outside the Home Counties, will feature beavily in whether the UK economy gets going again.

Private enterprise is doing what it can to make the North more attractive. But the government must act, too, and swiftly, or the regioo will not emerge "leaner and fitter" but will starve to death.

1984 and all that . . .

THIS week's example of the strange things people say about computers in the media, was sent in by J. Carr, of Tilehurst, Reading, who wins £5.

The early computers were only able to answer questions which consisted of two variables – for example, which retail outlet employs more than ten personnel? To ask more detailed questions it would be necessary to write complex programs. This was largely because, in the bad old days, computers tended to store their information one item after another, on magnetic tape.

Business Information Technology

LETTERS

Demand for Personal Computer

I READ with interest your leader (CW, June 3) on the IBM Personal Computer and agree with nearly all of it.

We started selling the IBM PC because of customer demand and sell only to end users. We do not regard ourselves as distributors, unofficial or otherwise although we are increasingly picking up business from ex-Microcomputerland customers who could not get supplies of software and add-ons from them.

We have been trading for over two years now and have, I think, a fairly good reputation which we do not intend to ruin by not backing the IBM PC's that we sell. All our customers are told that the IBMs we sell are grey imports and are not backed by IBM. They buy with their eyes open.

I would much prefer to buy from IBM UK and wrote to their Personal Computer project manager (yes, they do have one!) in February to this effect. He said that they had no plans as yet but would consider us as dealers if we proved ourselves responsible. I believe that we are doing that.

I would like to point out two things in IBM's defence. Firstly, it is software that people use and they will have to organise that in Britain – a time-consuming and difficult problem. Secondly, the Sirius 1 is aggressively priced and represents far better value for money than the IBM for most users.

We are also dealers for the Sirius and have advised anybody who cares to listen that it is s better machine £ for £ than the IBM and more importantly, UK software will be more easily available.

D. SAUNDERSON
Managing Director
KGB Micros,
Slough.

Small system user group

YOU recently published a letter (CW, May 20) from a General Systems User Group. Your readers also ought to be aware that the IBM Computer Users' Association has a Small Systems User Group of 370 members. They meet five times a year in various parts of the country. Their next meeting is in Leicester on June 15/16 when they will discuss the System 38 and see demonstrations of the System 23, Displaywriter and the IBM Personal Computer.

There is also a regional group of the IBM CUA, the Scottish Group, which covers Scotland and Northern England and is predominantly for small users. Their next meeting is on September 9. Details of these meetings are available from Heather Speciale on 01-551-1643.

G. F. W. GOODWIN
Public Relations Officer
IBM Computer Users' Association.

Pin-up girl protest

WE were fascinated to note the appearance of Lady Henrietta Foxglove as pin-up girl for the Abacus advertisement (CW, May 20) and the enticing offer to "see her in the rain". Can the product in question only be sold by the exploitation of a fictitious debutante?

Real women will be pleased to hear about the Women and Computing Conference to be held in London this October, which will offer s welcome respite from such trivialisation.

Details cao be obtained by sending an sae to: Women and Computing Conference, c/o A Woman's Place, 48 William IV Street, London WC2.

S. SWANSON,
M. O. ELSE,
and others
Central London Women and Computiog Group

Keeping track of time

I FIND Cliff Dilloway's suggestioos on "Keeping track of time" (CW, May 20) rather pointless, and in many ways a retrograde step. As he correctly points out there are many different time standards and practices around the world, but this does not excuse the use of a poorly considered practice.

Unfortunately computer systems and data also have to move around the world. The data may include times and dates; these should be portable and converted to the local time for display. This is easily done if a standard time scale is used at all sites. Automatic conversion to local time should be the norm (it is easily programmed and conversion both ways should be standard library routines on all systems). This makes dates portable.

Secondly, I doubt that a time quantum of a day is satisfactory in many cases. One should also include hours/minutes/seconds to be generally useful. This gives a format CCYYMMDDHHMMSS by extension, or a 14-digit number. Using the same 14-digit number to store seconds since a suitable chosen zero date, allows easy conversion to complete generality. It also allows computation of time differences using simple arithmetic.

Of course, this technique is much easier if most of the computer systems which use it are in countries where things like daylight saving time changes are predictable, rather than at the solution of the politicians, so that the system can automatically sdapt.

Unfortunately, most manufacturers' software seems to want to present you with time in local units (are there no worldwide computer *system* manufacturers?), so you will need to convert to your absolute time scale yourself (using a standard routine), but it really is worth it.

Sorry for pointing out the obvious.

R. E. BUCKLEY
Univeraity of Warwick.

Answer for solicitors

THE "final answer for solicitors", says Philip Hunter (CW, May 27), is "distributed Intelligence, based on a network of microcomputers, each capable of performing word processing and accounting".

While a "computer on every desk" may well be the final solution 10 or more years from now, it is not a very helpful concept to the average firm of solicitors at the present time. Most firms require s more modest solution, adapted to the well-defined needs of bookkeeping according to the very strict Law Society rules, obtaining basic management information, and saving typing time (and secretaries' sanity) by producing long documents on a word processor.

There are several different types of solution which might be appropriate to the needs of any one firm. For example:

1. A small country practice might choose a dual purpose microcomputer, with floppy discs, capable of both accounts and word processing.
2. A practice, large or small, which already has n word processor, and which is rather frightened of computers (and there are many of these), might consider a Visible Record Computer. The advantage, from a solicitor's point of view, is that they maintain a complete history of each matter on a ledger card, in an immediately accessible and visible form.
3. A medium-sized practice with word processing needs as well as accounts, might choose one of the newer multi-processing microcomputers with built-in hard discs and cartridge tape back-up.
4. A larger practice with more sophisticated management information needs might go for a true minicomputer system, with large hard discs and lots of terminals.

Before you can find the right answer to the needs of any particular firm, you have first to ask the right questions.

DELIA VENABLES
Microcomputer Advisory Service.
Lewes, Sussex.

Liveware File by Don

Take-off

WITH reference to the note by Boris Sedacca, "Portable word processing terminals take off" (CW, June 3) it is quite trivial to dump Microwriter text to any microcomputer by using the V24 interface adapter.

In particular we csn supply a simple program to allow Microwriter text to be dumped to a Research Machines 380Z running CP/M, so that letters, etc, can be edited and formatted using the TXED word processing system.

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PLESSEY
PERIPHERAL SYSTEMS

This week computer consultant Martin Hammer explains his research into the idea of extending a Codasyl database management system to handle a fully distributed network

What a distributed database management system means

THE term Distributed Datebase is a contradiction in itself.

Distributed, in the context of computers, means decentralisation of processing power, data storage, and most importantly decentralising the control of data access. Frequently "distributed" also implies the use of communications software usually to support remote inquiries or file to file transfer.

Database means central control of data storage and access, and usually implies support of complex data relationships, fully automatic recovery, data independence, and supporting multiple concurrent users with updating capability.

The best known database management system, and in my opinion the only one liable to become an industry-wide standard, is the Codasyl system. So this article is devoted to developing my theories in relation to a Distributed Codasyl Database, termed a DDBMS.

DDBMS is a system where all the normal facilities of a Codasyl DBMS are provided, where the data itself will reside on two or more nodes of a communications network, and most importantly where all the data is resident on two or more nodes which may be completely transparent to applications programs.

The first extension to the Data Definition Language will simply be to prefix the file specification in the file section with a node number. Having done this the existing methods of mapping physical files, logical files, and areas needs no change. We can split up our database into areas and map the areas onto our network as required.

The most complex change to the DDL will be in how we describe the mapping of records on to areas.

Three additional complexities are required when supporting complex data relationships.

The simplest is that we may want to contain all occurrences of a particular record type at a particular node. The previously described extension for mapping areas on to logical files and logical files on to physical files, combined with the existing method for mapping records onto areas, will support this requirement.

The next most complex feature is the ability to define a record type where occurrences may exist on any node, but when storing or accessing a particular occurrence the node is chosen dynamically according to the contents of some field within the record. This facility would be required for CALC records. The concept of the via record remains unchanged. For DIRECT location mode records, where the suggested database key was not available and the relevant area spanned more than one node then only database keys on the same node as the original would be considered as candidates for storing the record.

The existing DDL record name sub-entry is sufficient for describing the maximum subset of the database (ie including different nodes) that occurrences of the record may be stored on. However we will need extensions to the Location Mode entry to define a data item (node key) that will be used when deciding, at run time, which node to use.

So the syntax for the Record Name entry will look like the example in Figure 1.

The extended Within sub-clause would be repeated as many times as required. Data-name-2 will be a field within the record that may or may not be the same as the CALC key or may overlap or subset it in any manner. The repeated value ranges specified by literal-1 and literal-2 would not be allowed to overlap, although the repeated page ranges specified by integer-5 and integer-6 would be allowed to overlap, but must fall within the overall range specified by integer-3 and integer-4. It should also now be noted that there is a change to the way in which duplicates are controlled.

The third and most complex feature is the ability to define at run time whether a record will be stored/accessed using node key values or whether the record will be stored/accessed using the overall specified page range. This will require no further extension to the DDL, but it will require extensions to the DML.

If we take the simplest case of storing a record without using node key values then the existing DML

STORE record-name

and its interpretation remain unchanged. The system will store the record somewhere in the database according to the CALC key value and the overall page range specified for the record. The actual node used will depend upon how the area to file mapping was laid out.

If we want to store a record using node key values then the DML would be

STORE record-name-1 NODAL

The system would now examine the value of the node key and use this to establish from the WITHIN sub-clauses which range of pages is appropriate for this particular operation. It would then store the record following the normal CALC method and obeying any DUPLICATES phrase specified for the WITHIN sub-clause being used.

Retrieval of CALC records will also require extension to the DML as shown in Figure 2.

For FIND ANY the system would operate in a similar fashion to the STORE statement to establish the page range required, ie, if NODAL were not specified the system would use the overall page range for the CALC hashing algorithm, if NODAL were specified the system would examine the value of the node key and use this in conjunction with the Within sub-clauses to establish the page range to be used for the CALC hashing algorithm.

For FIND DUPLICATE the situation is a little more complex because the specified page ranges for the node key values may overlap. Thus it would be possible for record occurrences to be stored within the overlapping portion of the page ranges with the same CALC key value but having arrived from STORE verbs not using node key values as well as STORE verbs using the different node key value ranges that have the corresponding overlapping page ranges.

Now in the existing Codasyl implementations FIND DUPLICATE is always dependent upon having previously issued a successful FIND ANY (possibly followed by other FIND DUPLICATES). In a DDBMS not only will a previous successful FIND ANY have to have been issued, it will also influence the way in which the FIND DUPLICATE operates.

First of all the FIND ANY will establish a range of pages over which any subsequent FIND DUPLICATE will operate. This range will either be the overall range for the record if a FIND ANY without NODAL were issued, or the appropriate range according to the node key value if a FIND ANY with NODAL were issued.

The three options of FIND DUPLICATE would operate as follows:

(a) If FIND DUPLICATE NODAL were specified the occurrences of the record with the same CALC key and stored using the NODAL option with a node key value in the same range as that of the record that was found by the initial FIND ANY (remembering that node key values may not overlap) would be found.

(b) If FIND DUPLICATE ANY were specified then occurrences of the record with the same CALC key but stored or using the NODAL option would be found.

(c) If FIND DUPLICATE ALL were specified then all occurrences of the record with the same CALC key would be found.

It should be remembered that with all three options of FIND DUPLICATE the limits of the search will be established by the initial FIND ANY. Thus a FIND DUPLICATE ALL will not find all the occurrences of a record in the database unless the preceding FIND was a FIND ANY without the NODAL option.

```
RECORD NAME IS record-name.
RECORD ID IS integer-1.
LOCATION MODE IS
    { DIRECT
    | CALC USING data-name-1 DUPLICATES ARE NOT ALLOWED
                 NODE KEY USING data-name-2
    | VIA set-name SET [DISPLACEMENT integer-2 PAGES] }
    WITHIN area-name AREA [FROM integer-3 THRU integer-4]
                 FIRST
    DUPLICATES ARE LAST
                 NOT ALLOWED
    WITHIN area-name AREA FROM integer-5 THRU integer-6
    FOR data-name-2 VALUE literal-1 THRU literal-2
                 FIRST
    DUPLICATES ARE LAST
                 NOT ALLOWED
    MINIMUM ROOT LENGTH IS { integer-7 CHARACTERS
                           | CONTROL LENGTH
                           | RECORD LENGTH }
    MINIMUM FRAGMENT LENGTH IS { integer-8 CHARACTERS
                               | RECORD LENGTH }
```

Figure 1

```
FIND { ANY record-name-2 [NODAL]
     | DUPLICATE record-name-2 [NODAL | ANY | ALL] }
```

Figure 2

PUZZLER

HOW many times, on average, must a conventional six-sided dice be thrown in order to produce every number from 1 to 6, at least once each? Note that the problem calls for the *average* number of throws, not the *most probable* number, which is 11. The reason for the answer of a different one is that the distribution of results is not symmetrical. However, the thrower is the more likely to succeed in fewer than 11 throws. But if the thrower is unlucky it might take 50 throws, or 1,000 throws, or ... sibilities mean that ... number of throws ... the most ... Answer ...

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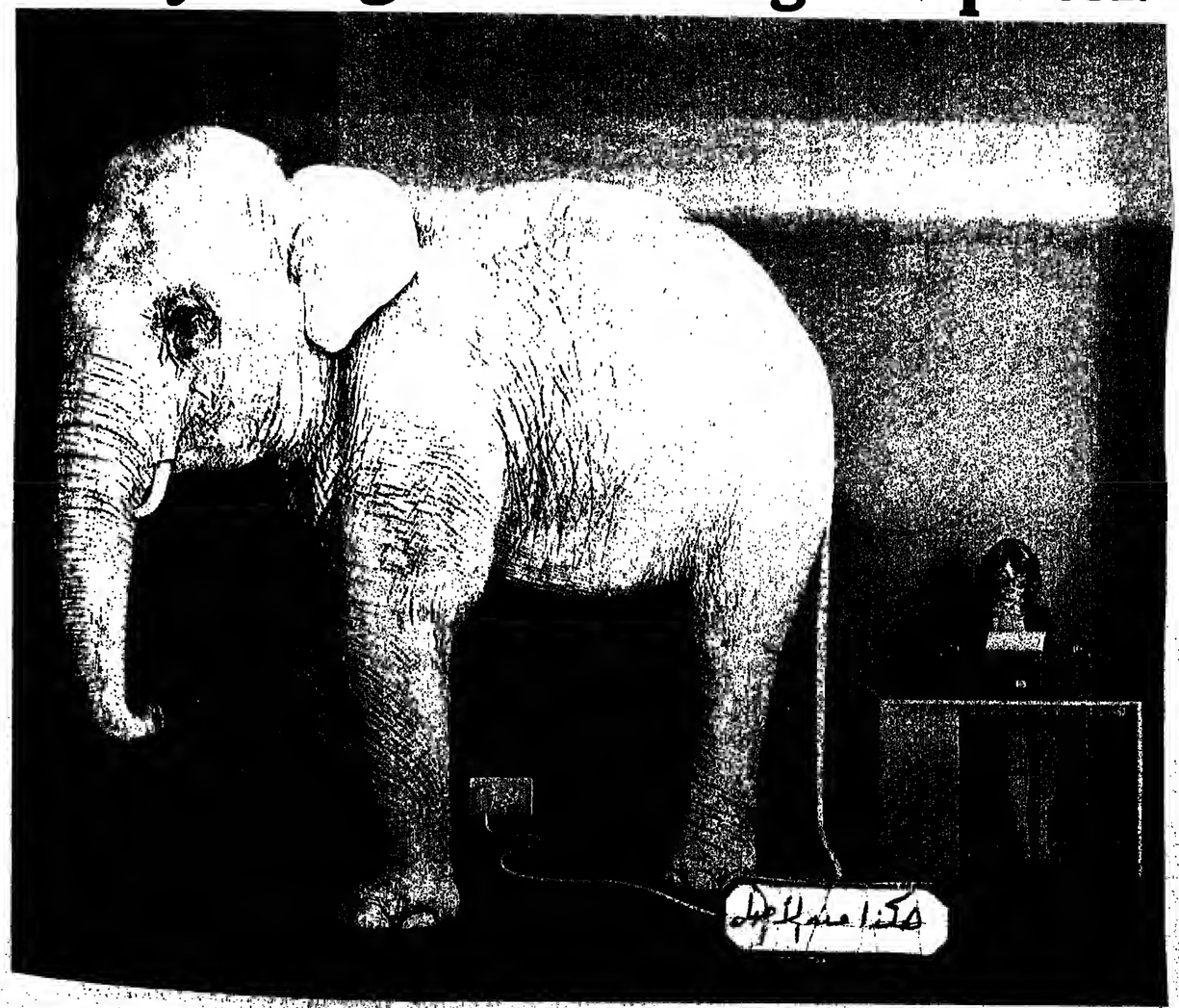


PEOPLE

'PR' and technical directors for ICL

ICL has made two top management appointments. Mike Watson has been named technical director and Robin Kinnear director of corporate communication.

Watson, 35, joins the company from Honeywell, where he was technical director of Honeywell Europe SA, based in Brussels, immediately before joining ICL. He also held positions in the UK and the US for the company.

Kinnear will be responsible for worldwide public relations and advertising, international communication, public affairs and government relations at ICL. He was formerly with Control Data, where he was director of international communications, based in Minneapolis.

Before that he was a director of PR consultancy D. H. Edelman. He headed the consultancy's technology group and clients included Clive Sinclair of Sinclair Research.

After opening the Knowsley Commercial Training Centre in Huyton, Merseyside, Environment Secretary Michael Heseltine looks at the equipment provided by ICL for practical experience training given to about 50 unemployed young people. The centre is jointly sponsored by Unilever and Knowsley Borough Council.

■ **Chris Bane, Richard Atherton** and **Steven Akroyd** have joined the sales staff at Oceanic's word and data processing division. Base was previously with GEC, Atherton was formerly a freelance consultant and Akroyd joins from Pitcher.

■ **Pat Endacott** has become national field engineering manager with Prime UK. Previously she held the same title in the digital systems division of Texas Instruments.

■ **Philip Harvey** has joined Arbat as a salesman specialising in banking.

■ **Christopher Nabavi** has joined Transtel Communications as manager of technical operations. He was formerly with Digital Electronics (Kootron), where he was manager of the electronics division.

■ **David Throup** of Micro Consultants has been promoted from UK marketing support engineer for the Iris range to international marketing support engineer for the complete data acquisition range.

■ **Jeff Evans** has joined Transducers (CEL) as sales director. He was previously sales manager with Dsvy Instruments.

■ **Bill Macpherson** has been appointed director of UK marketing and sales at Fortune Systems. He was previously sales manager for General Instrument Microelectronics, covering Europe, Africa and the Middle East.

■ **Ian Melis** has been appointed project manager, financial systems at BDC Cabinets. He was previously assistant computer manager at Joseph Stocks and Sons.

■ **Richard Morgan** has been appointed customer services analyst at LMR Computer Services. He was formerly with Foster Wheeler as systems engineer.

■ **Terence Byrne** becomes division head at ESI London and **Ian McInnes** has been appointed general manager of the company. Byrne is also a marketing manager with the company. McInnes was previously general manager with Active Electronics.

Apple UK names head of new-look sales team

A DIRECTOR of sales has been appointed at Apple UK to head the company's newly structured sales team.

Keith Hall, previously UK sales manager at Commodore Business Machines aims to increase sales by directing the sales force in providing more support for the Apple dealer network.

David King, formerly sales development manager for the medical and education markets has been given an extended role as sales development manager.

John Hill becomes field sales manager. He was previously field sales supervisor.

The company's national accounts department has two new national account executives, Malcolm Farrar, former Case sales manager and John Heppel, who joins from Mars Ltd.

The company moved to larger premises last month and can now be contacted at Eastman Way, Hemel Hempstead, Herts.

■ **Susan Pearson** has joined the UK arm of ADR as consultant in the company's word processing unit, having trained with the ETC development division in Princeton, New Jersey.

■ **Chris Cundy** has joined Systime as corporate credit manager. He has been with the company for two years, as general manager for the South-east region.

■ **Jim Day**, formerly manager of business planning and projects in ICL's logistics division, has joined Universal Computers, UCL, as systems manager.

■ **Walter Farrell** has been promoted to technical director of Walker Air Conditioning. He has been with the company since it started in 1974, and will be based in Glasgow. Tomar Hanraban has been promoted from sales engineer to branch manager of Walker's London office.

■ **Keith Young** has been appointed customer service engineer at Kennedy International. He joins the company after completing a four-year electronics engineering apprenticeship at Atomic Weapons and Research Establishment. Also joining as a customer service engineer is **Andy Funnell**, who was formerly field service supervisor with Computer Communications.

■ **Dr Peck Tan** and **Yair Melamud** have been appointed consultants at Butler Cox and Partners. Dr Tan was previously with Remex Holding in Hong Kong, where she was systems manager. Melamud will specialise in information and logistics management. He holds a degree in industrial and management engineering from the Israel Institute of Technology.

■ **Peter Bromwich** has left a career in technical publishing to become sales engineer at Rair. He was formerly advertising manager for Industrial Products magazine, and has also worked for IPC and Petey Doyle Publishing.

■ **Mike Rose** has become managing director of Delta Data Systems, and **David Longley** national sales manager. Rose was previously customer services director with Delta, and Longley joins from Harris where he was marketing manager of the information systems international division.

■ **John Lowe** has been appointed Northern regional manager with Computer Peripherals (Systems). He joins the company from Nexos where he was national sales manager.

■ **Roger Clarkson, David Pratt** and **Rick Rothwell-Gilroy** have taken senior management appointments with GKN Building services. Clarkson, who becomes systems manager, was previously group data processing manager for a leisure company. Pratt, who was formerly Southern area sales manager with the company's hire and sale division, becomes formwork manager. Rothwell-Gilroy joined the company in 1966 as the contract services division branch manager. He returns to head office as divisional accountant/administration manager for the hire and sale division.

■ **Barry Faith** has been appointed UK sales executive at Omnitec. He has been in the electronics and computer industries for 18 years.

■ **Rob Owen**, formerly project manager with Intergraph, has been promoted to sales executive for the company's South-east England and Central and East London regions.

■ **Roger Halliday** is now sales manager at Xylogics, where for the past two years he has been responsible for technical support of the company's disc drive controllers.

■ **Mike Rudd** has joined CMC Leasings as manpower development manager after 21 years with Burroughs, where he held senior posts in the US and the UK.

DIARY

JUNE 18

Communications – getting it all together. Sir George Jefferson, chairman of British Telecom. BCS. Royal Society, London SW1. Details BCS external relations dept.

Commercial use of APL and achievements. UK APL User Group. Details G. Suteliffe 01-788 7272 ext 2715.

JUNE 20

Visit to the Midland Railway Trust. BCS Nottingham Group. Details Ray Fowler on Nottingham 415415 ext 4725.

JUNE 23

Petnet and Pet computer networks. BCS Sussex Microcomputer Group. Meeting Room, King and Queen, Marlborough Place, Brighton. 7.30.

JUNE 27-JULY 2

Computer-aided design of filter networks. Second IEE vacation school at University of Essex. Details IEE, 01-240.1871.

JUNE 28

Local area networks. BCS WP&OA SE branch. United Reform Church, Small Hall, Addiscombe Grove, Croydon. Details Sandy Hathaway 66-35925.

JULY 6

Briefing expert systems. Edward Feigenbaum. BCS Expert Systems Group/SPL. Royal Garden Hotel, London. Details SPL Fifth Generation Computer Project 0235 24112.

JULY 6-9

Man/machine systems, international conference. BCS/IEE, UMIST, Manchester. Details IEE 01-240 1871.

JULY 7-9

Second British national conference on databases, BNCOD2. BCS/Universities of Aberdeen and Bristol. Bristol University. Dennis Dr M. J. R. Shave 0272 24161 ext 846 (mornings).

JULY 7-9

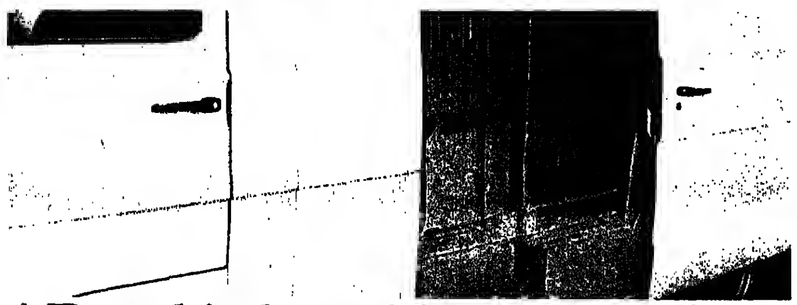
Fifth generation international conference. BCS Expert Systems Group/SPL. Royal Garden Hotel, London. Details SPL 0235 4411.

JULY 15

Auditors' brains trust. EDP Auditors' Association Inc. Little Ship Club, Bell Wharf Lane, Upper Thames Street, London EC4. 5.00.

JULY 26-28

Electronic image processing. International conference IEE. University of York. Details IEE 01-240 1871.



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COMPUTASTARS – NORTHERN HEAT

by Andrew Thomas

Barclays women scoop DP Olympics honours

Heywood & Partners 1 captain Clive Bennett winning his heat of the 100 metres.

COMPUTASTARS

Sponsored by Computer Weekly

THE data processing Olympics moved to Barnsley this week for the 1982 Northern heat. What the weather lacked in enthusiasm was more than adequately compensated for by the quality of the competition.

First mention must go to the women of Barclays Bank, who won every event in the team and individual competition. Only Rowntree Mackintosh spoiled Barclays grand slam hopes with a joint first place in the jumps. Jill McNulty lived up to her team name (Bloody Minded Old Cronies) and robbed Barclays Number One, Elizabeth Porter, of winning every event outright, tying with her in the shot put.

Whereas the women's competition was dominated by one team and its Number One for the whole day, the men's contest could hardly have been more open. After eight events, only two points separated the top three teams, and fourth place was a meagre five points behind.

The day started well for Heywood and Partners 1, whose Bill Edwards beat Digital's Chris Peet into second place in the shot. Edwards' team mates backed up their champion's performance, pushing none other than Heywood 2 into the second team slot.

As mentioned previously, Elizabeth Porter of Barclays tied with Jill McNulty of BMOC for the lead in the women's shot. No one was to get close to Elizabeth in any other event. BMOC and Reckitt & Colman tied for second place in the team contest.

The rugby relay always proves popular with the spectators, if not the competitors. The women from Barclays beat all the competitors of their own sex, and would also have come joint first with Compower in the men's competition.

The highlight of David Brown Gear Industries' day came when its Number One, Michael Sellers, beat Peter Jenkinson of Olivetti into second place in the putting. United Biscuits took the team bonours, with Olivetti and Rowntree Mackintosh tying for second. Second-best women golfers were Digital and Rowntree Mackintosh, with Digital's Kay Glynn losing to Elizabeth Porter by one point.

The last event of the morning saw Barclays women's last shared victory. Rowntree Mackintosh tied with them in the jumps, but the next best the team's Number One, Jo Cartledge, could manage was joint third place with Elizabeth Heeley from PMSL behind Kathryn Gray of Reckitt & Colman. Heywood 1 drew with Compower in the men's competition, Trevor Reed of PMSL taking the individual honours.

At the interval, only 19 points separated Barclays women from second placed Rowntrees. But whatever was discussed during lunch obviously had the desired effect, as this lead was stretched to 60 points by the end of the day.

Bill Edwards of Heywood 1 made a good start to the afternoon session with a first in the 100 metres. His team also drew for the lead with PMSL. As expected, Barclays women and Elizabeth Porter left everyone standing in the women's competition.

It was Reckitt & Colman's turn to be runners-up to Barclays women in the hockey, while in the football, Record Ridgeway scored its only success of the day, with its Number One Keith Taylor putting in an excellent performance to win the individual competition.

Taylor was obviously lifted by this triumph, and followed it with victory in the vaults. But his team could only manage fifth, Rowntree Mackintosh 2 having its moment of glory. Women's vaulting champions were, surprise surprise, Barclays and Elizabeth Porter.

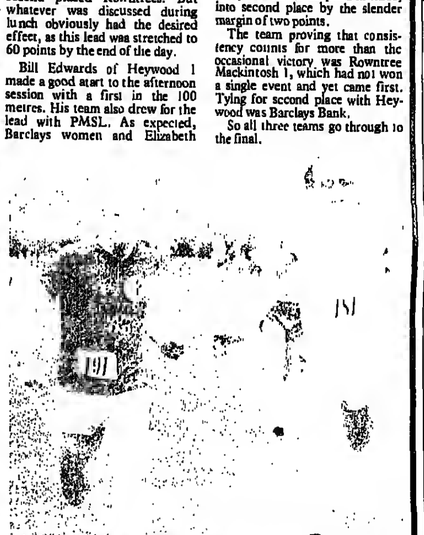
Then on to the steeplechase (What – only one lap? complained several competitors). Barclays women swept all before them for the final time to take a convincing victory in both the team and individual competitions, while male honours went to PMSL and its Number One Trevor Reed.

As the final results were announced, a surprised crowd discovered that a team and its Number One which had not won a single event had beaten Heywood & Partners, who had triumphed in three, into second place by the slender margin of two points.

The team proving that consistency counts for more than the occasional victory was Rowntree Mackintosh 1, which had not won a single event and yet came first. Tying for second place with Heywood was Barclays Bank.

So all three teams go through to the final.

Elizabeth Porter won all eight events in the individual competition.



Neil McCorquodale (left) crosses the line ahead of Paul Davies from Heywood & Partners 2 in the 100 metres.

Dawn Hainling of Rowntree Mackintosh helped her team to second place in the shot.

MEN'S TEAM RESULTS

Rank	Name	Points							Total
1	Rowntree Mac 1	25	33	32	32	32	42	36	31	263
2	Heywood & Partners 1	30	33	32	33	38	21	36	38	261
3	Barclays Bank	28	42	26	31	35	39	26	34	261
4	Compower	26	45	26	33	27	36	30	33	256
5	PMSL	25	36	23	32	38	24	35	39	252
6	Record Ridgeway	23	37	27	32	27	45	34	30	245
7V	Rowntree Mac 2	26	36	34	24	20	36	37	24	237
8	United Biscuits	28	42	35	27	28	21	22	32	235
9	Sheffield Insulating	22	42	26	20	26	21	26	30	213
10	DMT	28	33	31	20	27	21	21	25	206
11	British Telecom	26	30	29	18	25	18	27	28	199
12S	Royal Insurance	13	36	31	16	26	33	18	32	195
13	British Mail Order	20	30	27	25	21	21	25	23	192
14S	Digital 1 Leeds	20	30	30	21	20	24	19	17	181
14S	Data Logic	20	21	30	23	22	21	20	24	181
17V	Digital 2 Leeds	22	33	30	19	14	30	14	12	174
18	Scottish Widows	15	18	24	19	28	24	18	26	172
19	Heywood & Partners 2	29	18	19	20	15	27	18	25	171
20	Provincial B. Soc.	15	27	22	25	17	21	15	21	163
21	British Olivetti	22	9	34	13	18	30	17	19	162
22	David Brown Gear In.	20	24	32	12	21	18	11	22	160
23	NCC	16	6	34	21	17	15	21	20	150
	Digital 3 Warr	18	6	28	13	12	6	20	13	

MEN'S INDIVIDUAL RESULTS

Rank	Name	Points							Total
1	Bill Edwards (Heywood)	13	11	13	13	15	7	13	13	98
2	Trevor Reed (PMSL)	9	12	12	15	14	8	12	15	97
3	Mike Hawtree (Rowntrees 1)	8	11	12	11	10	14	13	11	90
4	Alan Pendleton (Barclays)	7	15	9	12	7	12	12	12	86
5	Keith Taylor (Record Ridgeway)	9	14	11	9	11	13	7	12	86
7V	Mick Jones (Rowntrees 2)	6	9	10	11	8	15	15	10	84
8	Robert Hirst (United Biscuits)	6	12	12	9	8	12	13	9	81
9	Michael Milne (Sheffield Insulating)	9	14	12	9	11	7	9	12	80
10S	Phil Reeds (Digital 1)	5	14	9	11	11	7	10	11	78
11	Alex Savoury (British Telecom)	8	10	14	8	9	8	9	7	73
12S	Chris Best (Digital 2)	9	10	12	10	4	6	10	11	72
12S	Dave Barrow (Data Logic)	11	11	7	8	6	10	4	6	67
14	Wayne Ryder (BMOC)	8	7	11	9	10	7	6	9	67
14S	Mark White (Royal Insurance)	8	10	12	10	6	7	7	6	66
16	Barclay Chaisty (Manchester Transport)	6	12	10	4	9	11	7	7	66
17	Paul Davies (Heywood 2)	8	11	12	5	8	8	7	6	65
18	Philip Sanderson (Provincial)	9	6	10	7	8	9	4	9	62
19V	Neil McCorquodale (Scottish Widows)	5	9	10	9	7	7	6	7	60
20	Peter Jenkinson (Olivetti)	5	8	10	7	9	8	6	9	60
21	Michael Sellers (David Brown)	10	3	14	4	6	10	3	7	57
22	Ian Ryder (NCC)	5	8	15	3	2	6	7	6	52
23	Alan Ramsey (Digital 3)	4	2	11	7	6	5	9	6	50
		7	2	12	5	6	2	7	6	47

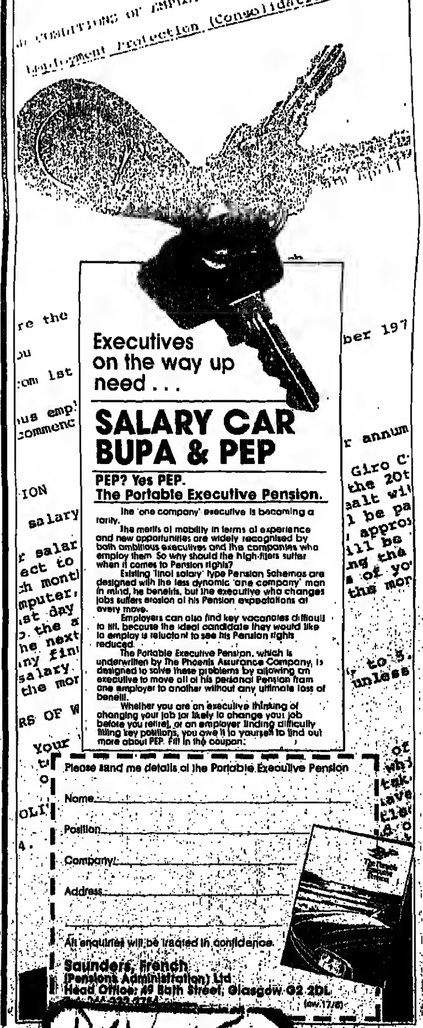
WOMEN'S TEAM RESULTS

Rank	Name	Points							Total
1	Barclays Bank	34	45	31	34	40	45	37	37	303
2	Rowntree Mac	22	42	27	34	19	27	36	26	233
3	British Mail Order	33	36	22	28	26	30	22	27	224
4	Reckitt & Colman	33	21	30	22	25	36	25	27	219
5	PMSL	20	36	28	22	23	6	22	28	187
6	Royal Insurance	17	6	30	16	21	24	16	24	154
7	Digital	19	18	20	26	26	6	19	19	153
		17	18	27	11	8	15	12	6	114

WOMEN'S INDIVIDUAL RESULTS

Rank	Name	Points							Total
1	Elizabeth Porter (Barclays)	14	15	14	14	15	13	15	15	117
2	Kathryn Gray (Reckitt & Colman)	11	7	10	11	11	12	11	11	84
3	Jo Cartledge (Rowntrees)	7	14	12	10	8	9	12	11	83
4	Jill McNulty (BMOC)	14	12	10	11	7	10	6	10	80
5	Elizabeth Heeley (PMSL)	7	7	12	10	11	8	9	13	72
6	Jane Harrison (Heywood)	8	12	7	8	9	2	7	10	63
7	Pat Livesey (Royal Insurance)	7	6	11	6	9	2	8	9	58
8	Kay Glynn (Digital)	11	6	13	2	2	5	3	2	44

Events are (left to right): Shot, rugby relay, putting, jumps, 100 metres, football/hockey, vaults, steeplechase. V denotes a veterans team, S denotes a small win entry.



COMPEC NORTH PREVIEW – 1

Close on 200 stands reflect industry's buoyancy in North as exhibition returns to Manchester for second year

Compec opens shop window on the North

WHILE the heart of the UK computer industry may be pounding within a 50-mile radius of central London, there is plenty of activity in the outlying regions. So for the second year running Compec goes to Manchester.

Compec North, which will be held at the Belle Vue exhibition centre in Manchester from June 22 to 24, follows the successful formula of Compec, the UK's largest annual computer show held at Olympia in London.

Compec at Olympia gives a blanket coverage of all areas of interest to the computer industry, while Compec North is a regional show.

One of the exhibitors there last year, Harry Thomas, director of data communications company Timeplex UK, said: "The North has been neglected. Compec North is a shop window for us."

Compec is very much a show for professionals, and not very much at home with the first-time buyer or the home computer user, whereas Compec North makes clear the fact that its doors are open to anyone who wants a computer.

The buoyancy of the computer industry in the North is demonstrated by the size of Compec North in only its second year. The number of stands, which last year reached 150, is close on 200 this year.

The importance with which international companies view the North is exemplified by the choice made last year by Japanese manufacturer Sharp of Compec North as the venue for the release of its new microcomputer, the MZ80B. Sharp has its UK base in Manchester, and will exhibit again this year.

The choice reflects the wide spectrum of visitors Compec North seeks to attract – end users, OEMs, and other computer companies in the North.

Last year, 4,271 visitors went through the doors of Compec North during the three days of the exhibition. The numbers are expected to increase substantially this year, and again they will come from a diverse range of organisations.

COMPEC NORTH'82
BELLE VUE MANCHESTER
JUNE 22-24 1982

The list in 1982 included representatives from the banking, finance, and insurance industries; telecommunications; electronics and engineering; construction, metallurgy and chemicals; printing, research and large retail groups; national and local government establishments; police and the armed forces; and large manufacturing companies and the major nationalised industries.

To satisfy the varying backgrounds and needs of its visitors, Compec North will have a diverse array of exhibitors.

The touchword of the Eighties is office automation, although some say that office automation is no more than distributed processing, the by-word of the Seventies, in a different guise.

The very boundaries of computer technology are being lost. In the US last year, according to IBM vice-president and chief scientist Lewis Branscomb, 6.5 million microprocessors were fitted into new automobiles. And with a capacity to build 25,000 microprocessors a day, General Motors is able to claim that it is the largest volume producer in the world of computers in their broadest sense.

Some say that the era of the microcomputer had not really arrived – at least for the commercial as opposed to the home market – until industry giant IBM gave its stamp of approval by making its own entry. But in spite of growing sales in the US, IBM's Personal Computer has not yet been officially released to the European market.

That the computer industry still remains an entrepreneurial one is demonstrated by the fact that, official release or not, the IBM Personal Computer is already on sale in the UK, and a growing number of software companies are undertaking to develop applications packages for it.

But other major computer manufacturers such as Digital Equipment, ICL, Sperry Univac, NCR, and Data General have announced their personal computer offerings to the UK market. And most of these products will be found at Compec North, though they will be shown by the distributors rather than the manufacturers of the equipment.

Science park, like this one at Birchwood, Warrington, are attracting new, high technology industry to a depressed area. See page 27.

Zygal Dynamics, of Bicester, Oxfordshire, is one of the five UK companies which has been appointed by DEC as an authorised distributor of its highly successful terminals. Zygal is now marketing the Robin, the upgrade board for the VT100 which turns the display terminal into a CP/M-based microcomputer.

In May DEC made its worldwide release of the remaining elements of its programme for the personal computer market, and it is expected that these products will be sold in the UK through its terminal distributors.

Also from Zygal is the latest 80 character per second daisywheel printer from Japanese manufacturer Fujitsu, as well as the Diablo daisywheel, and matrix printers from DEC and General Electric. While developments continue on new printer technology such as laser and ink jet printing, the matrix printer, in which vertical arrays of dot elements move horizontally to produce characters, still dominates terminal printer technology.

For the second year running London microcomputer company Rair will be in Manchester to show its wares to the local market. But this year it carries an additional feather in its cap with its selection by ICL as the provider of ICL's own personal computer. The deal with Rair was one of the many collaborative ventures that ICL's new managing director Robb Wilmot initiated during his first year at the helm of the UK's leading, but troubled, computer manufacturer.

Stealing a note out of IBM's book, ICL is calling its products ICL Personal Computer. ICL will

● Turn to page 25

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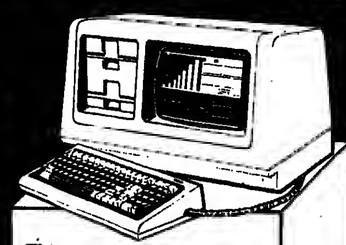

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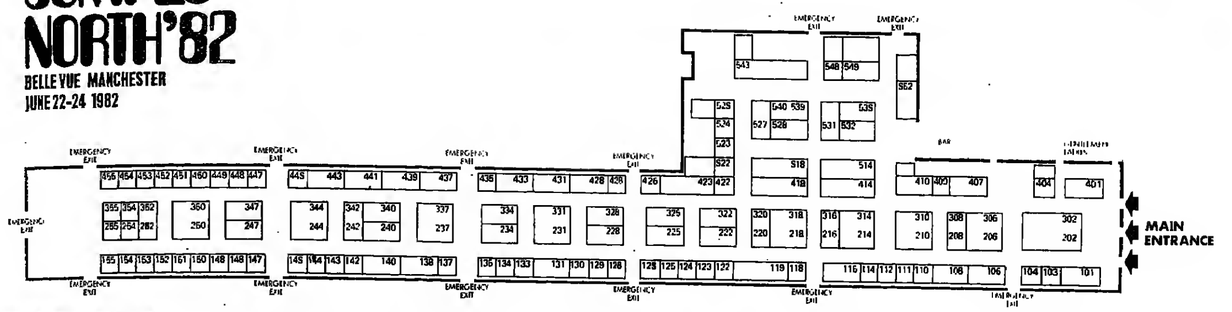

The floor plan of Compec North 82.

Industry leaders put their DP wares on show

● From page 24

manufacture the Rair 330 under licence at its Kidsgrove plant.

The Rair 330 has an Intel 8085 microprocessor which runs under CP/M or the multi-user MP/M operating system. ICL's version will include a 5¼-inch hard disc, 0.5 Mbytes of floppy disc, a printer and a display unit for about £6,000. The Rair 330 supports CIS Cobol and Basic from Micro Focus.

Another CP/M micro on show will be the Multivision business system from ADDS (UK). A basic system includes 64 Kbytes of memory, one screen and .7 Mbytes of disc storage. It can be expanded up to four screens, 10 Mbytes of disc, and 256 Kbytes of memory.

To complement the usual accounting software, the Multivision system can also run word processing and a database management package.

The combination of word and data processing capabilities in the same unit has been an increasing trend. In order to attract the market for office automation, vendors are beginning to realise that a hodge-podge of different terminals all performing distinct functions could soon effect anarchy rather than efficiency in the office environment.

A multifunction workstation which goes a long way to meet these needs will be shown by Computer Technology Ltd (CTL) of Hemel Hempstead. The 16-bit micro was developed by a small company on the West coast of the US, rather confusingly named Convergent Technologies. It at least saves CTL the trouble of changing the logo on the machine.

Convergent Technology is one of the bright stars of Silicon Valley, and has had a rapid rise to fame since it was formed only a few years ago by ex-Intel, Xerox, Digital Equipment, and Texas Instruments senior executives.

After CTL became UK distributor for the product – sold mainly to OEMs – Burroughs, NCR, Thomson-CSF of France, and US office equipment manufacturer Savin have signed agreements with Convergent to incorporate the micro in their own product lines. It forms the basis of Burroughs' B20 series, the new small business system it released in May, and is being used by NCR as the word processor element in its office system.

The CT range uses a 16-bit Intel processor and offers mass storage, high quality graphics, and a sophisticated operating system. Up to 16 units can be clustered in a group, each workstation having its own processing power but able to share resources. Recently, American conglomerate TRW has been appointed by Californ ia-based Convergent Technology to handle the worldwide marketing rights for the micro. But that will not affect CTL's position in the UK market, according to a TRW spokesman.

The National Computing Centre has its headquarters located in Manchester. Set up in 1966, the NCC acts as a clearing house for information about the UK computer industry. It is also active in a large number of training programmes in programming, data communications, systems analysis, and databases.

NCC administers a number of government-sponsored programmes, with active involvement in, for example, the software products scheme which has just been allocated an additional £10 million in support. NCC promotes its own software packages, most notably perhaps Filetab, a report generator which is in use at well over 1,000 installations worldwide.

NCC's choice of Manchester as its base is not surprising considering that it can claim to be the home of computing in the UK. The world's first commercial computer was manufactured by a local company, Ferranti.

The machine, Ferranti Mark 1 Star, was the result of development work which began at Manchester University.

Ferranti programmable terminal systems, the PT7 range, are alternatives to the ICL 7502 and IBM 3270 cluster terminal systems. In addition Ferranti has a range of floppy and cartridge discs, as well as terminal systems for interactive working and file handling which it will roll out at Compec North.

With the country as a whole in a economic recession, the North has had more than its fair share of suffering. But there are still opportunities for enterprising companies or individuals, and when the economy begins to shake itself out of the doldrums, the North is expected to be as strong a market for the computer industry as the South-east.

According to figures compiled last year by the National Computer Index, there are as many mainframes (228) and nearly as many small business computers (149) in Manchester as there are in the banking district of London. But it had only 222 minicomputers compared to 3,280 in the London area.

David Fairbairn, director of the NCC, has estimated that when the recession ends there will be a shortage of some 40,000 analysts and programmers, of which up to 12,000 will be in the North.

A company typical of those which have made their businesses in the North a success is Terminal Display Systems of Blackburn, Lancashire, a distributor of terminals and computer peripherals for a number of American companies.

TDS established itself in Blackburn in 1974 through a direct financial link with the traditional textile industry, and it played upon that link to develop monitoring systems especially designed to aid textile producers.

Anticipating that computer users would begin to demand colour monitors, TDS was one of the first to exploit the technology. It will be showing at Compec North its Easycolour 4200 terminal which was designed and is manufactured in the UK. It will also exhibit its intelligent microprocessor-based terminals with powerful data editing and forms generation facilities, with models that offer emulation for IBM and Burroughs users.

While TDS is a typical home-grown Northern England firm,

● Turn to page 26

Computer Technology's busy headquarters at Hemel Hempstead. It will have a multi-function workstation on show at Compec North.

COMPEC NORTH'82
BELLE VUE MANCHESTER
JUNE 22-24 1982

The exhibitors

Zentec Corp is an international company which sees the opportunity to reach an important audience. Zentec is one of the world's leading manufacturers of customised intelligent video terminals, supplying exclusively to the OEM market and to companies like RCA, GTE, Tandem, McDonnell Douglas and United Press International.

While the policies of the present

● Turn to page 26

	Stand number
Abacus Computer Marketing (North)	104
Able Computers	539
ADDS (UK) Ltd	325
Air Sales	445
Ampex	449
Anderson Jacobson Ltd	443
Andrew Industrial Equipment Ltd	145
Benson UK	110
BFI Electronics Ltd	422
British Telecom	208
Brown's Operating System Services Ltd	126
Calcomp Ltd	431
CASE	214/314
Cattle Electronics	448
Cifer Systems Ltd	532
Cii Honeywell Bull	106/107
Codex UK Ltd	549
The Comau Group	522
Computer Talk	202/302
Computer Weekly	202/302
Computing	42b
CPUL	144
CPR Consultants Ltd	409
CPU Peripherals	527
CTS Computers	452
CTL	449
Datac Ltd	111
Datadigital Computer Systems	149
Data Type	407
Decmate Ltd	535
Delta Data Systems	410
Department of Industry	152
Derwent Data Systems	428
Dicoll Electronics Ltd	334
Direct (UK) Ltd	151
Distributed Management Systems Ltd	523
DN Computer Services Ltd	216
Donoghue Information Systems Ltd	525
Electrographic Ltd	143
Eurocom Data	130
Europa Data Products Ltd	524
Facit Data Products	234
Farnell International	118
Ferranti Computer Systems Ltd	210/310
Fungus Computer Products Ltd	222
GCS Engineering	148
GEC Computers Ltd	322
General Datacomm (UK) Ltd	552
Gould SEL Computer Systems Ltd	328
Graham Wright Computers Ltd	137
Guardian Computer Services Ltd	247
Haigh & Hochland Ltd	125
Hytec Microsystems Ltd	228
IAL	518
Intec Data Systems Ltd	528
Interlekt Electronics Ltd	414
Kersdown Ltd	142
KC Business Systems Ltd	123
Kendata Peripherals Ltd	115
Kennedy International Inc	540
D. Kipping Ltd	242/342
Kode Ltd	112
Kone Instruments	548
Leemhire Ltd	114
Manitron Division – Ficention Ltd	404
Mannesman Tally	138
Manpower Services Commission	131
MAP Computer Systems	340
MAU	438
Master Systems (Data Products)	218/318
Merit Computers Ltd	122
Micom Borer Ltd	108
Micro Design	126
Microgate	250/350
Middlecross Limited	206/306
National Computing Centre	101
Newbury Laboratories Limited	429
Nixdorf UK Ltd	141
Norman Magnetics – Servo Service	433
Northern Data oman	435
NSC Computer Shops	240
Penny & Giles Computer Peripherals	418
Pilkington P.E. Ltd Hytran Products	124
Positron Computers Ltd	133
Pragma Ltd	531
Racal Milgo Ltd	423
Rair Ltd	119
Raven Computers	447
Rohan Computing	451
Sharp Electronics (UK) Ltd	237/338
Sumlock Computing	103
Systems International	304
Tamaye/Great Northern	401
Tektronics UK Ltd	543
Terminal Display Systems Ltd	129
Terminal System Services Ltd	147
Thorn EMI Datatech Ltd	314
Timplex Ltd	244/344
Transam Microsystems Ltd	150
Trend Communications Ltd	225
Versatec Electronics Ltd	231/331
Volker-Craig (UK) Ltd	220/320
Willis Computer Supplies Ltd	134
X-Data	140
Your Computer	204
Zentech International	135
Zygal Dynamics PLC	347

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There has always been one big problem with the General Electric TermiNet 2000 series matrix printers from Zygal. It's not that they're a new breed of matrix printers, so advanced, so functional that's the problem. Their reliability has never been questioned. It's true that they are very quiet in operation, easy-to-use, easy-to-carry. The sleek clean lines complement all decors. Fewer moving parts. A choice of 60 cps and 150 cps models in either keyboard or receive-only configurations. Each with higher print quality, including descenders and underline.

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COMPEC NORTH PREVIEW – 3

Chris Youett talks to some more of the exhibitors at next week's big show

'Compec North is where we expect data comms buyers'

MacLEAN . . . "Centre of gravity has moved North."

TIMEPLEX, a data communications equipment specialist, will be showing its E-series self-contained data concentrator and its switching multiplexer family of statistical multiplexers, as well as the Nokia range of CCITT compliant leased line/public switched telephone network modems at Compec North.

Also on show will be the series of intelligent single card CCITT 2,400, 4,800 and 9,600 bits per second leased line modems.

CASE is in the communications business, too, and Christine Stott said: "Business over the last year has increased and we have opened a Manchester office. We also saw people at Compec North last year, we didn't see in London. Our first sale of the error correcting modem was made in the North to the printer industry."

South Wales-based Data Type Terminals, which recently obtained extra capital from Citi-Corp's new technology development fund, is emphasising its low-cost graphics terminals and its DEC LSI 11/23 based minicomputers which have recently been enhanced with Honeywell D160 120 Mbyte disc drives.

They run under standard DEC operating systems RT11, RSX11M, RMS11K, RSTS, TSX Plus as well as Bell Labs' Unix. Applications can be programmed in Ansi 74 Cobol, Fortran IV, Basic and Basic+2.

Chairman Gerry Tuffs said: "Obviously, Olympia is a major show which you cannot afford to miss and the name means success. Last year at Compec North we closed an order for over 100 units.

"We found it a successful show, so we are back again this year. There has been too much emphasis on the South.

"We expect it to be successful this year," Tuffs added.

The computer side of glass giant Pilkington will be exhibiting its linc drivers and multiplexers which can operate on RS232C, synchronous or asynchronous interfaces at speeds up to 9,600 Kbits per second.

The kit can also operate over fibre optic cables such as the Mercury project, and Pilkington PE's John Ashall said: "Because we are in the business of data communications, Compec North is where we expect the buyers to be.

"It is the first true data communications exhibition we have covered," he added. Pilkington PE is based at St Asaph, in Clwyd.

Farnell International, of Wetherby, South Yorkshire, is the sole UK agent for the Tandberg range of terminals and power supplies. Marketing manager Mike Sefton said: "We are concentrating on ergonomics and Tandberg is one of the few manufacturers that meets the West German DIN specifications.

"Compec has always been successful at Olympia, but there is a market in the North-west that will only come to Belle Vue and we hope to meet them there," he added.

Positron Computers at Newton-Le-Willows has developed and is manufacturing a desk-top general purpose microcomputer based on the Motorola 6809 chip set. It runs under the OS/9 operating system developed by ex-Motorola staff in the US at Microwave.

Technical sales manager Bill Adams said: "OS/9 is a Unix look-alike and we are looking for suitable high quality software in Basic, Cobol, Pascal and C for the system.

"We are a Northern based company and want to make a local impression at Compec North," he added.

Compec North is also being seen as a gathering for OEMs and the educational market. Midlectron of Belper, Derbyshire, will be showing a range of DEC LSI products, televideo kit, customised terminals, VT100s and data concentrators.

Midlectron's Eric Pugh said: "We hope to have a Cambridge Ring system working at the exhibition and our concentrator can handle up to 16 terminals on the ring station.

"Our main interests are in OEM and education and Compec North seems to be a gathering for OEMs. It is the right marketplace for us," he added.

Northern Datacom is using Compec North to launch itself on to the communications market. Kevin Hayes, for the nine-month old firm, said: "Our equipment is divided into three categories: a range of protocol converters which can have from single to eight channels with the largest supporting more than one protocol; a range of statistical multiplexers made at Champagne, Illinois; low-cost terminal patching systems, acoustic couplers and low-speed modems made by Bostrap in Ireland.

"Compec North is the first time Northern Datacomm has exhibited anywhere. One of the reasons we are going is that as we are North-ern based, and it is logical to sell to people locally. It is also a way of launching the company," Hayes added.

Zygal Dynamics at Bicester is hoping Compec North will be a repeat of the Olympia show. Managing director John MacLean said: "We will be showing the OEM VT180 personal computer, the Fujitsu SP830 80 chips daisywheel printer and we have been promised a GE 3000 Series matrix printer which prints letter quality documents at 100 chps and draft quality at 300 chps.

"We have expanded our sales force and its centre of gravity has moved North, so we have to support it by going to local exhibitions.

"Compec at Olympia has also been good for us, so we are hoping that Compec North will do likewise," MacLean added.

Kode of Calne, Wilts is another firm which will support its sales office at Manchester via Compec North. It will be showing matrix printers, 300 lpm solid font printers, communications kit and Winchester disc drive back-ups.

COMPEC NORTH'82
BELLE VUE MANCHESTER
JUNE 22-24 1982

Shop window on North

● From Page 25

government have yet to fulfill the promises of the campaign trail, the revitalisation of British Telecom seems to be one of the shining stars in the move to make nationalised industries more competitive.

BT has been making a steady stream of product announcements in the past few months, and has made clear its intention to participate fully in the development of office automation systems. It is featuring at Compec North its new Regent Call Connect System, which uses solid state technology with stored programs under microprocessor control.

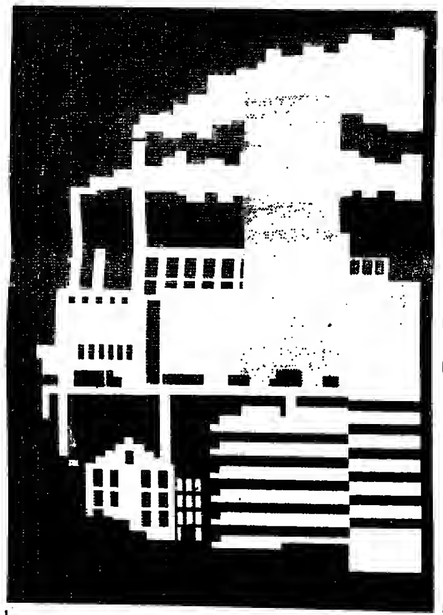
Communications is an area that will be well represented at Compec North, with companies like Master Systems, Able Computer, Racal-Milgo, Northern Datacomm, and others displaying their products to the local market.

In the Chancellor's last Budget, high technology was given a £130 million boost in what Sir Geoffrey Howe called an "innovation package". The government made clear that it intended to switch resources from the lame-duck heavy engineering industries to service-oriented investment in new technology.

But the North must make sure it gets a fair share of the government incentives.

In the Commons a few weeks ago, the new Under Secretary for Industry, John Butcher, said it was up to individual companies to put forward projects for support. He was referring to the Microprocessor Applications Programme, a training and awareness programme with a three-year £55 million budget which has now been extended.

Butcher gave a regional breakdown of figures for offers of grants for feasibility studies and development projects. They showed that in 1981-1982 there were 41 offers in the North-west, 128 in the North-west, 123 in Yorkshire and Humberside, and 370 in the South-east. The challenge was implicit, and the three-day Compec North exhibition in Manchester hopes to lend further vigour in the industry which has the greatest hope of establishing that the North retains its importance in the economy of the country.



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COMPEC NORTH PREVIEW – 4

Science parks bring hi-tech industry to depressed region

Sarah Hardcastle looks at an American idea that's catching on in the UK

DTC's Geeson at work on Warrington's Genesis Unit.

WITH closures and job losses continuing to mount throughout the North-west, one of the region's new rays of hope has been its science parks. These have proved a highly successful enterprise, attracting new, mainly high technology industry to a largely depressed area.

Science parks are an import from the US, where they began as industrial complexes built on or nearby university campuses providing an environment for the exchange of ideas between high technology companies and academics. In crossing the Atlantic, the concept has been modified. With a few notable exceptions, the seven or so science parks built in the UK have not set out to be places for the exchange of ideas like their American counterparts.

The emphasis has been on creating landscaped light industrial estates with excellent site facilities and inducements to attract computing, electronics and engineering companies to settle in them.

In the North-west of England, the Warrington and Runcorn Development Corporation was one of the first area development organisations to see the potential of the science park concept as a means of encouraging industry to settle in its locality. Warrington now has two science parks – Birchwood and Boulevard – and is planning a third, scheduled for two or three years hence.

Birchwood, the first of Warrington's science parks, was started in 1975 and is now fully committed with several computer companies among its tenants. Its 70-acre site is magnificently landscaped with wide boulevards, trees and greenery.

The buildings are mostly low rise and have been designed for the requirements of their high-tech inhabitants providing a mixture of light industrial accommodation with plenty of office space.

Started last year on a site of 30 acres, Boulevard has an equally attractive environment; tenants are still being sought for this park.

But apart from creating a pleasing rural environment, Warrington has provided help – much of it free – in the form of advice on services and assistance with architectural and engineering design. Though the locality does not qualify for aid under the regional development schemes, Warrington says that its rents compete favourably with the rest of the North-west and are significantly lower than the big conurbations.

Of equal importance to science park occupants are the good communications to and from the region. As part of its sales pitch, Warrington cites its nearness to Manchester International Airport and the excellent motorway and rail links with the rest of the country.

For science park residents, local telecommunication costs can be cheaper than in other parts of the country as the area for local telephone calls is larger than others in Britain.

A further attraction is the region's large pool of labour drawn from the North-west's two main cities, five universities and polytechnics.

Lured by the incentives offered by Warrington, computer companies have been keen to settle in the science parks and their surrounding developments.

One of the first was Data General which has sited its European training centre for field engineers in Birchwood. Engineers from all over Europe spend four to 12 weeks a year on either initial training or refresher courses at the company's 60,000 sq ft building.

According to Data General, Warrington was chosen because it proved the most economic following evaluation of other sites in Europe.

Similarly, Digital Equipment has located its regional headquarters in Birchwood from which it handles customer training, and sales and field services for the North and North-west. A "green field" site with capacity for growth over the next 10 years are DEC's reasons for its choice.

A feature of American science parks is an "innovation centre" providing office or laboratory space for fledgling companies with an idea they want to turn into a business. Warrington's Genesis Unit was conceived in this mould, but like so many ideas crossing the Atlantic the reality is different. It has turned into multi-let office and light industrial accommodation for conventional small business.

Genesis has been designed with the needs of the small computer company in mind: strengthened floors and special ventilation are available and interior walls can easily be re-positioned to accommodate expansion or changing requirements.

Warrington will provide assistance with room layout, professional back-up services, and will also include furnishings and partitioning in the rental.

Four computer companies have settled in Genesis. Among them is Data Terminals and Communications, a Californian manufacturer of eight-bit micros and terminals, which has sited its UK sales and repair operation there.

DTC moved into Genesis last July from premises in Manchester. The company had originally chosen the North for its UK headquarters because its US management had personal ties with the region and through a distributor it had established a growing market outside the South-east.

Genesis was its choice because "Warrington offered us such a good deal on rent, services and building design," says Rod Geeson, DTC's general manager.

DTC has 2,000 sq ft of Genesis – mainly office space – and employs nine people. As well as running its marketing and servicing its products, the subsidiary also does software development and is presently working on a fifth operating system for its microcomputer range. It also modifies power supplies for the European market.

DTC imports its products from the US for the UK market, but by the middle of next year Geeson anticipates that an assembly operation will have been established in Warrington. For this reason he is thankful for the ready pool of labour in the region.

Like other Warrington settlers, Geeson is enthusiastic about the excellence of international communications to and from the area. "With Manchester Airport nearby it means products can be air-freighted directly from California faster than they could through Heathrow. California to our doorstep via Manchester Airport takes four days," says Geeson.

Though DTC's Warrington operation is not research-based, which would make it a logical candidate for establishing close contacts with the area's academic institutions, the company is one of the few in the science park to have links with a polytechnic.

"We have one person on secondment from North Staffs polytechnic developing application software which I hope will be an on-going relationship. I also do work with the students in the polytechnic," explains Geeson. This initiative, however, stems less from a desire to put the science park concept into practice than from a fact that Geeson used to lecture at the polytechnic.

Though it is not within the science parks, the Grange industrial estate has been built along similar lines with equally attractive facilities and landscaping. The UK manufacturing subsidiary of Gandalf Data Communications, a Canadian company specialising in modems and multiplexers, moved into new premises in Grange last December.

Its purpose-built accommodation comprises 7,000 sq ft of offices and 15,500 sq ft of production and support facilities completed in February. Additional office and production accommodation is planned for the near future.

At Grange, Gandalf manufactures the company's full range of products and runs a complete marketing and technical support operation. It is soon to open a development facility, principally working on data communications software.

"Our chairman chose Warrington originally because of its location and the help given by the development corporation," says Mike Glover, managing director of the UK subsidiary. "Warrington is one of the more active New Town organisations and they have been very helpful in assisting us in choosing our new site and in its design and construction."

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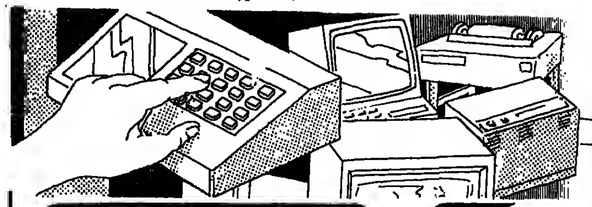

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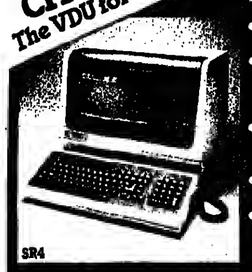

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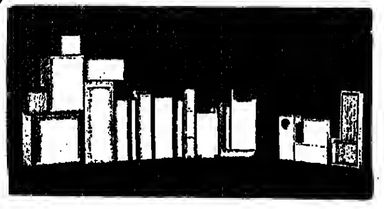

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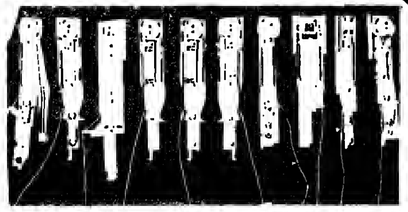

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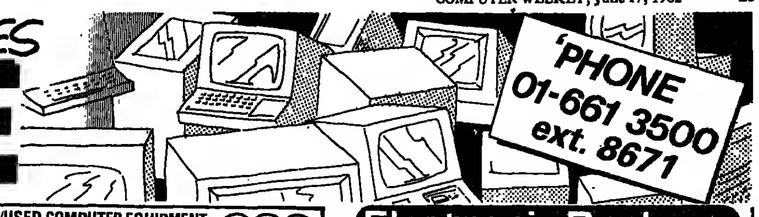

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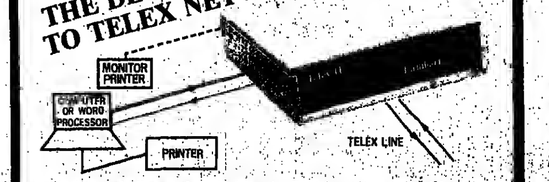

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Responsibilities will include immediate development of administrative data processing across the organisation, planned introduction of office automation and the development of library technology throughout NERC. In the latter two areas, specialist expertise is already available, but the person appointed will be required to direct activities to produce an integrated development plan. Some travelling within the UK and abroad will be required.

Experience relevant to the post would include commercial data processing, including the use of integrated data base techniques, use of communications systems and distributed intelligence and the supervision of consultants.

Salary will be on the Principal scale £11,912 – £15,948 pa. Placement on the scale will depend on previous experience.

NERC is not a Government Department, but conditions of service are similar to those of the Civil Service.

Application forms, to be returned by 5th July 1982, are available from: Mr. M.A. Bryant, Natural Environment Research Council, Polaris House, North Star Avenue, Swindon SN2 1EU. Telephone: (0793) 40101 ext 372.

Natural Environment Research Council

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(9960)

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You must have an HNC, formal computer maintenance training and a minimum of 2 years' experience on IBM or NCR computer servicing. Ideally this would be on IBM 370/125, 4331, 3031 mainframes with 3705, 3505, 3340, 3420, 3277/8 peripherals or NCR 721, 8272, 6441, 2252 and similar equipment.

There are also positions for people experienced in NAS 5000, FORMATION 4000 CPU, Memorex Disk and Tape units, STC printers and RACAL modems.

Very attractive tax free salaries, commensurate with experience, will be paid. One year renewable married status contracts, free accommodation, medical care, 30 days' leave and other benefits.

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CSC

COMPUTER SCIENCES COMPANY

Computer Sciences Corporation, with over twenty years of successful operations worldwide, is the largest hardware independent information sciences company in the world.

The services Computer Sciences Corporation provide, cover every aspect of computer technology from requirements analysis to the design and implementation of large real-time information systems; from the design and development of many different compilers to the development of complete operating systems for a number of computers; to the design of data communications networks and very large database systems.

The Corporation has personnel resources of over 15,000 employees located in well over 100 offices worldwide and also owns its own remote processing service INFONET.

Computer Sciences Company (UK) is a well established British company and since its foundation in 1969, has undertaken many major projects. Recent and current projects include strategic defence command and control systems for both the Royal Navy and the Royal Air Force and a major computer/communications system for another large government department. Recent company re-organisation has placed increased emphasis on marketing the corporate services and capabilities and, therefore, CSC (UK) urgently seek the very best d.p. professionals to work on current projects and to provide a multi-discipline resource to meet imminent new projects. Main areas of interest are in the following categories.

Salaries £8000 to £18000
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Free BUPA, plus free season ticket loan.

Tandem Expertise

Tandem Programmers are urgently required to work on some of the most modern and technologically superior defence and communications systems being supported by CSC.

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A major company has appointed CSC to undertake a large database assignment involving ADABAS. DMS 1100 experience is vital to yet another project. However, these are just two of many database related projects requiring in-depth experience and skill in this discipline. General DBMS design, data analysis and data modelling are all necessary ingredients being sought, as well as the overall qualities of consultancy prowess and business methodology, particularly with regard to marketing support activities.

At less senior levels vacancies exist for CDBOL, IDMS Programmers including a long-term project out of the London area. In general, machine experience is secondary to specific database or database systems experience.

Office Automation

This is an area being strongly pursued by CSC and the required skills that are essential to it are needed now. Word Processing, micro computers, software packages, multi-terminal systems and working with viewdata techniques is all good experience and likely to attract immediate interest.

Communications

This is one of the key technologies prevalent in nearly all of CSC's work and, therefore, the total range of comms. skill and experience is constantly in demand: Network Design and Audit, Protocol specialisation, Telecommunications, Packet Switching, LAN's, Voice and Data Transmission, IPA, SNA and Viewdata are just a few of the primary areas of interest.

One important aspect of the company's capabilities in designing and implementing communications systems, is the use of proprietary modelling packages and training on these will be given, possibly conducted in the USA.

System Designers

Naturally, it is impossible to be specific about individual experience, but, for example, Honeywell L64 designers will be of particular interest. Further, the emphasis is more on 'total' systems background rather than specific applications.

CSC are most interested to hear from Programmers with *not less* than three years experience of the more up-to-date environments of d.p. where modern, state-of-the-art equipment and techniques are being used.

Military Systems & Emergency Services

A fairly high degree of CSC's expertise and track record lies in these areas and new projects are anticipated. Significantly experience in simulation, war gaming, ship-borne systems, intelligence or security systems is most welcome – at any level, as is experience with police or fire brigade systems.

Where else... With CSC's high reputation and established offices throughout the world, the opportunities for overseas work and projects are always arising. In Europe, fluency in German or French is normally required. Indeed, current projects underway in Switzerland could absorb bi-lingual (German/English), suitably experienced personnel at any time.

It is our belief that the opportunities afforded by CSC are difficult to surpass and applications are invited from any discerning skilled professional.

Contact Mike Creamer at Modus or
David Camidge, Personnel Manager, CSC, Heathcote House, 20 Savile Row, London W1. 01-439 6252.

(9915)

Real-time Software Engineers

Communications is today's growth technology. Tomorrow's developments are in your hands at STC

By far the fastest growth sector of high technology industry is telecommunications. Tremendous strides are already being taken in Information Technology, but their full impact on tomorrow's integrated office systems will only be fully realised through the developments being made at STC in New Southgate.

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System X takes us a quantum leap ahead in technology to the confluence of microprocessor and telecommunication technology. We now require additional Software Engineers to be involved in these state-of-the-art developments which will dramatically increase the effectiveness of the UK's information processing and communications systems.

The Software Department of Switching Main Exchange Product Division is responsible for STC's software involvement in System X, with a number of dedicated project teams working on (1) Sub-system design, implementation and integration, and (2) System integration and development.

We now wish to strengthen these teams and would like to talk to Software Engineers with experience in communications, defence or process control systems, aircraft simulation, signalling or any other real time application. Whatever your background, you must demonstrate the ability to liaise effectively on major multi-lateral projects and to present your work persuasively.

For high calibre professionals with a degree or its equivalent and the potential to lead a small project team, we offer very attractive salaries, comprehensive benefits and exceptional career prospects.

If you have the talent to help give STC and Britain the lead in telecommunications, write giving brief details to: Colin Hamilton, Recruitment Department, Standard Telephones & Cables plc, Oakleigh Road South, New Southgate, London N11 1HB.

STC New Southgate
The communications development centre

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HONDA

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Candidates

Candidates will be mature in outlook. Probably in the age range 25-30 years. Relevant background in a commercial installation with supervisory skills will be required. Ideally candidates will have a degree level education. Mature candidates with appropriate experience are welcome to apply. Candidates will be required to visit the company's European computer centre from time-to-time for short durations.

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(8920)

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Our client, an Essex based Manufacturing Company currently developing financial systems on Honeywell equipment is seeking several experienced Analyst/Programmers to enhance its Data Processing Group. 3/4 years' COBOL programming is required, preferably with On-Line experience and a minimum of 6 months' Honeywell L64 exposure. Excellent salaries commensurate with experience and the normal benefits associated with a large company are offered to the successful applicants. C3978

C. LONDON PROGRAMMER c £10,000 + Bonus

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In return, we can offer you the chance to acquire in months the kind of experience it would take years to accumulate anywhere else. We'll also ensure that your skills are systematically developed through first-class formal training. Career progress from Programmer to Project Leader within two years, and to Consultant two years later, is certainly not unheard of. And if the conventional management ladder doesn't appeal, there's an attractive alternative route into specialist technical programming. Our remuneration package is highly competitive and, if you have the experience we seek, starting salary is unlikely to prove a problem.

To talk about the jobs in more detail, ring David Robinson on 01-578 9111. (If you can't ring during office hours, you can record your name and address on our night line (01-575 6195) for an application form). Alternatively, send him your c.v. at Data Logic Limited, 320 Ruislip Road East, Greenford, Middlesex.

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FTB

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ICL 2900	VMEB/IDMS	COBOL	All Levels	Long Term
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Demand for certain classes of computer staff in the North is increasing. Eugene Dempsey looks at what's available

Systems projects waiting for high calibre analysts

THE real and psychological effects of the economic recession have thrown up something of a paradoxical situation on the Northern computer jobs scene.

On the one hand, it is apparent that certain classes of computer staff are becoming greatly in demand – with the inference that there is a premium available above the established "going rate" of salary for those wishing to change jobs.

On the other side of the coin, the uneasiness promoted by widespread national cutbacks and even more closures has determined many erstwhile job-hunters to stay put, on the basis that existing job security and income stability constitute a position of true value.

The other major influence is summed up by Arnold Sampson, managing director of the Sampson Staff Recruitment Agency: "It is clear that most employers are not allowing themselves to be drawn into a 'Dutch auction' even where their needs are acute. This is often because the computer activities of major companies and groups are viewed centrally as part of a wider personnel policy, so that the temptation to offer additional salary inducements to would-be computer employees is removed by the possibility of a knock-on effect among existing employees."

One concession he adds, is that some employers, while thus not offering "above the norm" salary levels are nevertheless promising early salary reviews (after six or even only three months). Presumably the inference is to be drawn is that the absence of immediate additional cash rewards could be offset by foreseeable pay rises.

It is becoming increasingly difficult to gauge the worth of job hunters any more. "There are no longer any obvious rules of thumb," Sampson comments.

Ability, as always, is the one constant yardstick though, and this factor alone can mean a difference of several thousand pounds between programmers of differing levels of skills and experience.

"But," warns Sampson, "in the present situation any employers taking the view that 'there are many people out there looking for jobs and we can get what we want on the cheap' are likely to find this attitude rebounding on them."

It is perhaps significant in itself that neither recruitment agencies nor prospective employers exhibit any real willingness to put cash figures on the supply/demand balance in the North.

What is clear is that genuinely good analysts are currently very difficult to unearth, with the result that filling almost any analytical job, as well as those with specifically relevant programming experience, becomes a nightmare.

There are a lot of attractive, interesting systems projects now on the move, and such systems simply cannot get off the ground without an appropriate team of high calibre analysts. But, as Sampson says, "Happy and busy computer people are just not looking around to any great extent," a further factor influencing a state of semi-famine.

Add this to the fact that those planning a move feel justified in asking for the full salary going rate, *plus* the cash outcome of the "early review" tactics, *plus* something extra for actually moving and the difficulty is explained.

In the North, a wide range of vacancies are still available for people to work in teams specialising in technical systems. The very nature of such projects has often seemed to attract the kind of interest-based dedication that lead most such computer people to put job satisfaction at the head of their list of priorities, and to stay with one company for longer than the majority of their commercial systems counterparts.

This "stay put" frame of mind, alongside the generally less healthy salary levels prevailing among technical project staff compared with the differently-paced commercial world, is clearly a major reason why so many jobs remain vacant.

If the computer recruitment aspect is indicative, recession or no recession, the North is currently witnessing a significant number of major developments in such commercially-oriented computer projects as those abounding in banking and insurance companies.

Tony Roberts, a director of the recruitment consultancy OCC (Northern), points to the "much broader base" of computing activities in the Manchester and Liverpool conurbations. He suggests that the fact that financial institutions are largely one step removed from the sectorial chain reactions in comparison with industrial and manufacturing-linked computer departments of companies, influence their relative immunity to the peaks and (currently) troughs of industrial activity.

"Financial and commercial institutions have stood up well to the recessional period," he says, "even allowing for the fact that the level of growth has slowed a little in recent months."

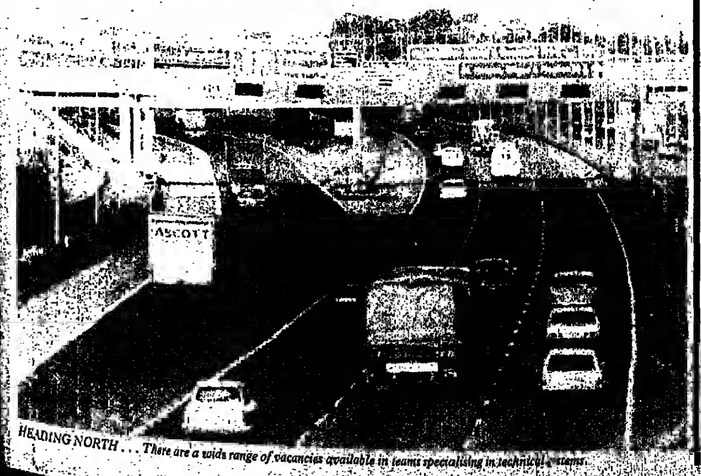
A number of computer using companies are currently not recruiting for the "normal", relatively run-of-the-mill type of staff, says Roberts, opting instead for software area personnel related to a concentration of maintenance and sometimes expansion of existing systems.

In general, although a widening gap can be discerned between the manufacturing and commercial computing areas, Roberts notes that a pattern has emerged whereby recession-hit companies have forced a slowdown in the rate of salary increases.

Along with this trend, he points out, bonus payments have come under intensive scrutiny, with the result that they do not now occur automatically and, when agreed, are often at more modest levels than in earlier more prosperous times.

Echoing other similar views, Roberts says that while computer people at the more senior levels are staying put in recognition of job security rather than highly attractive financial rewards, "at the programming level there'll always be those wishing to switch jobs for reasons of greater financial benefits, in order to broaden their general computer experience, and of course the promotion prospects which may be part of a new job deal."

ROBERTS . . . "Financial and commercial institutions have stood up well to the recession."



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'North-west has remained at the forefront of technological change'

William Kindon reports on a region that has built on its industrial heritage

IN 1948 a stored memory computer ran for the first time in the world at Manchester University, heralding a whole new industry. Further pioneering research then took place here, progressing from first generation computers incorporating valves, through second generation transistorised computers to the latest third and fourth generation computers incorporating large and small-scale integrated circuits.

This belies the image of North-west England as a region looking backwards to the Industrial Revolution. On the contrary, the region has built on its industrial heritage and its ability to adapt, to remain at the forefront of technological change.

In 1978, the latest year for which accurate figures are available, 6,600 people were employed in the production of computers and computer peripherals in the area covered by the North-west Industrial Development Association (NORWIDA), ie the counties of Cheshire, Cumbria, Greater Manchester, Lancashire, Merseyside and the High Peak district of Derbyshire, while the electrical engineering sector as a whole employed almost 98,000 people. Many are employed by the large companies of Ferranti, GEC, Mullard, Plessey and ICL, each of which has a substantial presence in the region.

Other companies include old-established firms such as Salford Electrical Instruments and newcomers ranging from the Marconi Space and Defence Systems plant at Neston in the Wirral producing computer-controlled missiles, to a myriad of small companies located throughout the region.

Most receotly Direct UK, an associate company of Direct Inc, based in California, opened a factory in Warrington New Town to distribute and eventually manufacture a range of video display terminals for the European market.

One particularly interesting development has been the setting up of a robotics plant by Dainichi-Sykes at Bamber Bridge, a joint venture between a Japanese and a Huddersfield-based company. Indeed, the attraction of overseas electronics companies is a valuable complement to the growth of the region's indigenous electronics industry.

Why should the North-west prove to be an attractive location for new and expanding electronics companies? Undoubtedly, financial incentives in the form of regional development grants and regional selective assistance have a role to play. A number of companies have received substantial sums of money.

In addition, there are now several schemes to make it easier for new and small companies to obtain venture capital for innovative or high technology projects.

Anglo-American Venture Management, based in Manchester and linked with the British Technology Group has been particularly active in the area, having enabled Postroo Computers, of St Helens to expand from a start-up in 1979.

Companies in North-west England are also eligible for assistance under the Microprocessor Applications Project, and Microelectronics Industry Support Programme, the Product and Process Development Scheme and the Software Products Scheme, each of which will be unaffected by changes in the assisted area which take effect in August.

Already, since its inception in 1978, 411 offers of grants for feasibility and development projects under the MAP have been made to North-west companies, the highest number to any region outside the South-east, revealing their readiness to adapt and take advantage of new technology.

Perhaps of greater importance, however, is the outstanding concentration of support resources for high technology industries in North-west England. The National Computing Centre, established in Manchester in 1966, provides a number of services to industry, such as advice and training, as well as supplying software packages.

The nine major institutions of higher education in the region — the universities of Lancaster, Liverpool, Manchester and Salford, the polytechnics of Liverpool, Manchester and Preston, the University of Manchester Institute of Science and Technology and the Manchester Business School — now offer co-operation with industry over a wide field of training and in research testing and consultancy.

These institutions also make a significant contribution to the quality of the region's workforce. Together they produce a combined qualified output of about 6,000 annually in science, engineering and technology.

Another feature of North-west England's back-up facilities for high technology industries has been the setting up of a number of science parks, the UK's first commerical science park having been established by Warrington Development Corporation at Birchwood.

Science parks can now be found at Upton in the Wirral and at Salford, close to the university, while others are planned for Manchester and Warrington.

Among the companies which have already been attracted are Digital Equipment and Control Data at Warrington which, in addition to the provision of suitable premises in an attractive environment, benefit from the region's excellent motorway network.

This is further complemented by proximity to Manchester International Airport which currently handles five million passengers a year and £1½ million worth of freight each day, making it the country's principal regional airport.

In spite of its willingness to adapt, North-west England has not been immune from the effects of the recession. In the area covered by NORWIDA, unemployment in April stood at 455,501 or 15% of the working population compared with 12.6% for the UK as a whole.

And in the first [illegible] months of 1982 the North-west experienced 22,291 redundancies, although this is significantly down on the figure for the same period last year when there were 35,431 redundancies, so the dication perhaps that the worst of the recession is over.

Yet while employment in manufacturing has declined a trend which has accelerated over recent years, number of sectors, such related to the high tech nology industries, continue to expand. In addition, microelectronics then include telecommunications, pharmaceuticals, aerospace the nuclear power industry and the manufacture of and gas equipment, particularly in relation to the development of the Morecambe Bay Gas Field.

Naturally, there are exceptions, the closure of [illegible] plants in Manchester and Winsford being examples, although the Winsford plant has since been occupied by Thorn Peripherals.

But the prospects for the electronics industry in North-west England are bright, and are enhanced by the growth of interest in information technology generally.

NORWIDA provides information and guidance to companies from all parts of the world wishing to establish production capacity or distribution units in North-west England. For further information contact: North-West Industrial Development Association, Brazennose House, Brazennose Street, Manchester M2 5AZ. Tel: 061-834 6733.

First stored memory computer ran in 1948 from Manchester University

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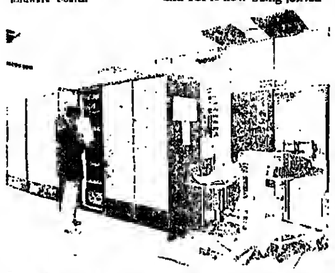
Ferranti — geared to beat the recession by boosting sales

Eugene Dempsey finds business booming for one manufacturer

DESPITE the universal problems thrown up — or, more precisely, emphasised — by the long-drawn-out recession, Ferranti has demonstrated that it is geared to beat such difficulties in the best possible manner: by outperforming the necessarily demanding sales targets for its broad spectrum of computer systems.

Already off the ground in the new financial year with "business looking good", Ferranti has been among the North's primary computer job providers with currently about 300 graduate staff spread mainly across the system designers-software-hardware board.

Despite the inevitable effects of government spending cuts which have touched its more traditional "bespoke tailored" systems, Ferranti has pursued a policy of calculated diversification which has seen a fairly rapid evolution, rather than revolution. This enabled the company successfully to market and sell an increasingly wide range of "standard" systems, which now represent some 40% of total sales volume. Thus, while the much bigger bespoke systems still represent the biggest chunk of Ferranti's activity, its line-up of blue-chip users such as Shell, BP and ICI is now being joined by a host of users, down to office managers, who are adopting the new systems.



Engineer inspects a PCB on an Argus 700E at British Telecom — a large Ferranti user.

Recruiting an adequate number of first-class systems designers and other professional staff has proved difficult for Ferranti compared with even two years ago, but with a salary spectrum spanning the £7,500-£12,0000 range for senior grades it feels that other incentives are not appropriate.

"In addition to this attractive salary scale," said a spokesman, "job candidates should value the fact that Ferranti is a pretty stable employer, a point underlined when a recent issue of shares to employees was significantly oversubscribed."

Asserting that the company had "never recruited for the sake of it," he said that the economic situation had "sharpened our edges" without inhibiting any decisions to spend money when necessary.

In common with other major computer manufacturers, Ferranti has always been willing to use job recruitment agencies and consultancies in its search for high calibre staff, and the spokesman was particularly impressed by those concerns which went considerably further than merely recommending and sending along for interview prospective job fillers.

"The better organisations now do a careful sifting operation," he said.

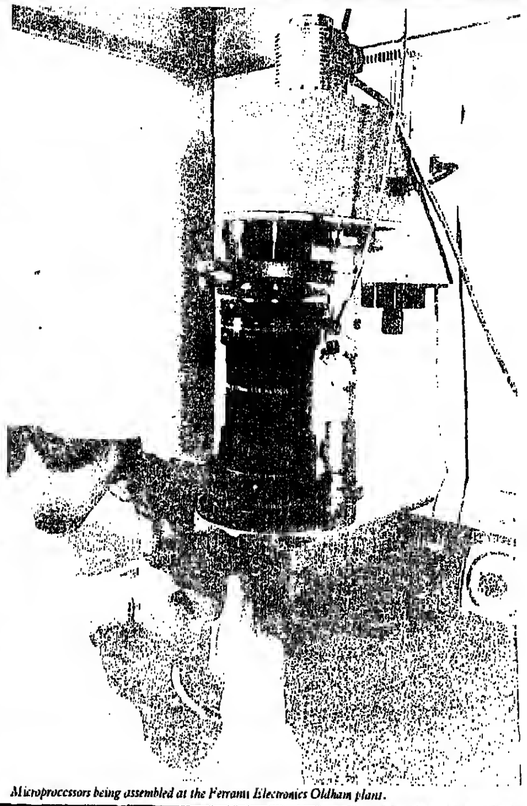
For anyone in the North looking for a computer job, it is obvious that Ferranti presents an attractive proposition, especially via the recent expansion into more standard products which sell on the facilities they offer rather than merely on such traditionally considered parameters as speed, rise/fall time, cycle time etc.

Thus, a highly successful market recently has been the sale of intelligent terminals emulating IBM and ICL units. One example is the PT7, which provides the village bank branch with the facilities of the mainframe machine via on-the-spot programming facilities.

Introduced only last September but already proving increasingly popular is Ferranti's Telex Manager System, a store-and-forward system with in-built message switching capability.

Another major recent development is a composing system for newspapers and magazines which has already borne out Ferranti's policy of adopting the role of selling problems, and not merely equipment.

Ferranti predicts with confidence that it will maintain a 2% yearly growth in professional staff recruitment in the foreseeable future.



Microprocessors being assembled at the Ferranti Electronics Oldham plant.

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For contracts in the South and Midlands contact Alan Morton. (8807)

Eugene Dempsey spoke to people who have relocated to the North . . . and found that they are much better off

Leaving 'bright lights' for cheaper housing and friendlier neighbours

JACK CHRISTIE starts a new job next month as a systems analyst with the National Giro Bank at Bootle on Merseyside – and he's a happy man. After years in the heart of Southern suburbia at Croydon, he is uprooting and heading North with the comment: "I'd swop where I'm going for the bright lights of London any time."

Christie, who has spent part of his career as a data processing manager but more recently has been a lecturer, has taken a key job at the Giro centre which, he enthusiastically points out, will bring major benefits in housing, cost of living, environmental advantages, and – not least – to join a community which he believes typifies the open friendliness of Northern folk in contrast to the Croydon experience where such spontaneous camaraderie is not common.

Housing is one of the major contrast points between South and North. Christie, for instance, has sold his three-bedroomed terrace house in Croydon for £35,000, and bought himself a three-bedroomed "immaculate" semi-detached home at Ormskirk in a farming community for £28,500, including a "beautiful" garden.

"I could have dropped the price a couple of thousand if I'd really been anxious to do so, but the big price differential does enable one to go for the house one likes," he says.

When he starts at Bootle, Christie will have a ten-minute journey each way, whereas down South a 12-hour day includes a lot of commuting time which adds hours to the working day.

Relating this to pay levels, he says: "Generally it is true that salaries are somewhat down compared with Southern rates, but if you take into account the recovered 'lost' commuting time and the cost (around £400 pa, and £1,000 pa in the case of one of my Southern colleagues) then parity is not far away."

The environmental and personal advantages of working "up North" are pinpointed clearly by him: "When I'm installed in my new home, I'll be an hour away from the Lake District and the Yorkshire Dales are virtually on the doorstep, as is the Lancashire coastal resorts region.

"Furthermore, when we were house-hunting in Ormskirk one couple whose home we were viewing one evening offered to put us up overnight without any prejudice; while another couple, next door to a house we had hoped to see but found inaccessible at the time, took us around their house (accompanied by cups of tea) because 'it's basically the same as the one you'd hoped in inspect'. Down South, it is difficult even to get to know people living around you."

Andrew Lucas, marketing manager of Davy Computing in Sheffield, echoes many of Jack Christie's comments. "This is a nice place to live, on a hill and in dog-walking distance of the moors and open country. Contrast this with our previous location, Hounslow, where if you stuck you nose out of the office a jumbo jet would land on your head!"

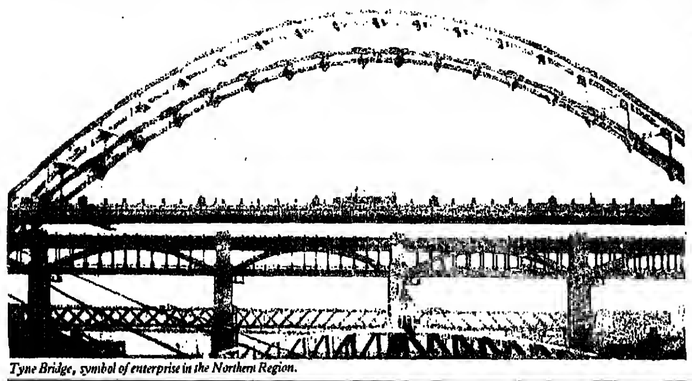
On commuting time and cost, too, his views endorse Christie's comments. It is not unusual when working in London, says Lucas, to lose between two and four hours each day travelling to and from work, with an annual £400-£500 travelling cost, compared with his present situation in which a short bus-ride ("costing 5p or 6p – we actually use *coppers*") gets him from home to the office.

LUCAS . . . Working in the North can mean commuting time cut in

In terms of communications, Lucas takes the high speed (125 mph) Inter-City train from Doncaster to the centre of London weekly and the journey takes only two hours. Another Northern convert working with him points out that the Sheffield-Heathrow car trip takes no longer than Maidstone-Heathrow via the centre of London.

"My wife, who's from Essex, already loves it here after only three or four months, and for me the pace of life in the North is worth a lot of money. There is better level of living for the same money compared with the South, and it's a nice place to live," says Lucas.

Finally, on the question of relative entertainment attractions, he is in no doubt: "Tell me how many people working in the centre of London actually go to the theatre or similar nights out in a year. We have the Colisible Theatre here in Sheffield – and, anyway, as much ful lot can be achieved by taking a 'weekend away' London from here."



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Application forms may be obtained from the Personnel Manager, Salford Civic Centre, Swinton, Manchester M27 2BN. Telephone 061-793 3156. Closing date for applications 30th June, 1982.
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Metropolitan Borough of

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Over £200 million has been invested in the computer industry in Scotland in two years . . . Chris Youett reports

DP companies create 6,000 new jobs North of Border

IN the past two years over £200 million has been invested in the computer industry in Scotland. This represents capital equipment, systems, buildings and therefore jobs.

The Scottish Development Agency (SDA) has estimated this investment alone accounts for over 6,000 new jobs and, while many manual jobs can be filled locally, there is still a need for DP professionals not only in the computer industry but also in manufacturing and commerce to bring in the benefits of technology.

Historically, the prosperity of Scotland was based on coal, shipbuilding, distilling and weaving. The first two have declined considerably, causing what social commentators call "structural unemployment".

Although the oil industry has created some jobs, there has been a largely unpublicised growth in computers and electronics over the past 20 years.

Honeywell, which has just announced a £1.3 million expansion of its research and development side at Newhouse in Lanarkshire, has been producing DP equipment North of the Border for over 30 years.

There are now over 200 firms employing more than 38,000 people in electronics alone in Scotland, with over 20% in white collar grades. Scotland has the heaviest concentration of PCB manufacturers and subcontractors in Western Europe.

Among the household names in the DP industry which have operations there are IBM, ICL, Burroughs, Hewlett-Packard, Honeywell, Ferranti, MFE, Nippon Electric (NEC), DEC, National Semiconductor and Motorola.

Motorola has a plant at East Kilbride which it claims beats the rest of Motorola's factories in the productivity league.

Most employers are situated in the Central Lowlands, where the population is concentrated. This includes both the new towns and the older industrial centres.

Naturally, firms based in the North-east tend to be biased towards the oil industry, and this is reflected in the goods and services they supply.

When it comes to educational facilities, there are 38 technical colleges which offer full and part-time courses in DP related subjects, and produce over 4,000 qualified students a year.

The UK's first microelectronics training centre was established at Paisley College of Technology. It provides not only courses, but helps to monitor new micro developments too.

The area also has more university places per head of population than most European countries. One adult in eight is receiving some form of further education or training, according to SDA figures.

New chairs in microelectronics have been established at several universities while six more Honours courses and three Masters courses in computer science and related subjects have been introduced.

Further job opportunities can be expected from developments made at Heriot-Watt University's research park and the science park set up by Glasgow and Strathclyde Universities, the SDA and Glasgow District Council.

Of course, you may be fed up with working for a salary and decide to go out on your own. There are a number of financial assistance schemes available.

TESTING one of the new 4-inch wafers in part of Motorola's most advanced microcomputer and memory production facility at East Kilbride, Scotland.

These include the microelectronics industry support programme (Misp), the software products scheme, the microprocessor application project (Mup), the product and process development scheme, the research and development requirements boards, regional development grants, selective financial assistance, inplant training awards, rate-free sites in the Clydebank Enterprise Zone and the European Investment Bank Loans.

The European Investment Bank provides fixed interest medium-term loans to firms in Scotland investing in ventures which provide for additional, or safeguard existing, jobs. The loans are for up to 50% of fixed asset cost.

In 1980, in-plant training assistance was introduced to provide up to 80% of the costs of retraining involved in modernisation programmes or job-creating investment.

Regional development grants are available for firms investing in Scotland's assisted areas and cover buildings, plant and equipment.

Selective Financial Assistance provides for grants for major investment projects in manufacturing industry involving over £500,000 and are usually worth about 10% of project costs.

The software products scheme is to provide aid to software houses, bureaux or consultancies towards the cost of developing new products or packages and of marketing the products in the first year of sale.

Research and development boards provide aid to develop commercial products and processes aimed at harnessing new technology. There is a similar scheme for developing industrial robots.

Over 15,000 acres of land have been allocated for industrial use in development areas with sizes ranging from half an acre upwards. The SDA also provides resources here, with up to 36 million square feet of floor space in over 700 factories at 200 locations. These can be rented or sold.

With a budget of over £100 million a year, the SDA also operates a new ventures unit which was set up to help get businesses off the ground and with a special bias towards new technology.

Scotland also has good communications links, with direct flights to most major cities in the UK and Europe, a motorway network and high speed trains from Euston to Glasgow and Kings Cross to Edinburgh. When the APT has been debugged, this will cut at least 30 minutes off the journey time.

Of course, you can always stick with spending 80% of your time maintaining systems that are documented badly and rarely seeing an application fully completed.

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Systems Analysts circa £8k
Programmers circa £8·5k

Rolls-Royce Motors, based in South Cheshire is continuing its development of computer systems. These developments include engineering and materials management systems, quality control, manufacturing history as well as varied financial applications. All these projects utilise the facilities of an IBM 4341, DOS/VSE with CICS and IDMS.

Systems Analysts are required at two levels. The Senior Analysts should have relevant experience in one or more of the above project areas and must have worked on a project from feasibility through to implementation. For the less senior positions candidates must have a sound training with at least two years solid analysis experience. At both levels applications experience is more relevant than a particular hardware background.

Programmers with a minimum two years experience of both PL/1 and CICS are also needed. Database knowledge is desirable but not essential as training will be given in IDMS.

Successful candidates will be rewarded with benefits befitting this most prestigious company, including generous relocation where necessary.

For an immediate interview contact Graham Pepper on **061-491 1666** (during office hours) or Adlington **(0257) 480291** (evenings). Computer People North, Sovereign House, Stockport Road, Cheadle, Cheshire SK8 2EA.

ROLLS ROYCE

Rolls-Royce Motors

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The posts are in such areas as hospital medical care, nursing, stores, pharmacy management, administration, finance, personnel and payroll.

DFP

The posts are in a wide range of projects from payrolls to Social Security payments system, in scientific and technical support and in an advisory capacity for public service computing. Applicants must not be more than 55 years of age on the closing date (ie, born on or after 6th July, 1927), and possess:

SYSTEMS ANALYSTS (£7,822-£9,758): Either a minimum of 5 years' relevant computing experience or at least 4 years' post graduate relevant experience plus a degree, HND or equivalent qualification in computer science or other allied disciplines with computing as a main subject. Candidates' experience must include a substantial period in systems design.

PROGRAMMER ANALYSTS (£6,521-£8,314): Either a minimum of 3 years' relevant computing experience or at least 2 years' post graduate relevant experience plus qualification as above. Experience of ICL 1900/2900 series computers (including PLAN, COBOL, FORTRAN, GEORGE, VME, DDS, IDMS) or mini computers (including DEC, CMC, CTL) or communications would be an advantage.

The Civil Service Commissioners may decide to interview only those applicants who appear from the information available to be best qualified.
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Informal enquiries may be made by telephone to the Department of Finance and Personnel (telephone Belfast 760761, extension 2709), or the Department of Health and Social Services (telephone Belfast 44377, extension 261 or Belfast 30666, extension 230).

For further information concerning the posts and an application form, please write or telephone (quoting job reference SB 2282/W) to the Civil Service Commission, Rosepark House, Upper Newtownards Road, Belfast BT4 3NH (telephone Dundonald 4555, ext. 315). Completed forms must be returned to arrive not later than 8th July, 1982. (9931)

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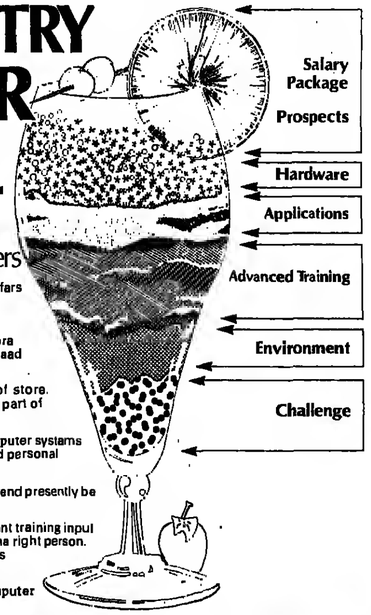

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Tony Dutton reports on jobs for degree-holders

Local firms snap up computer graduates

GRADUATES with degrees in computer sciences or associated subjects are in fairly high demand by local companies and local authorities in the North and North-east of England.

They stand a good chance of finding suitable employment in data processing — and their chances are doubled if they hold a degree in microelectronics and microprocessing, according to Durham and Newcastle Universities, both of which hold honours courses in these subjects.

John Clowes, of Newcastle University's computing laboratory, confirmed that those with degrees in microelectronics and microprocessors stood an excellent chance of being snapped up by large local organisations.

Companies involved in semiconductor and integrated circuit manufacturing, television, radio and consumer electronics, and control engineering and research establishments are especially interested in such graduates.

Many of the graduates in the past have also been recruited by the Scientific Civil Service.

These graduates are equally popular, he said, with local authorities who see the advantages of employing people with qualifications, providing the experience that can be applied to computer controlled instrumentation and engineering systems.

Their main areas of employment are in designing hardware interfaces — for example, traffic control systems. It is in the context of interface design that local divisions of the Gas Board seek out such graduates in the North and North-east universities.

Because of the geographical demand for data processing personnel most computer science degree graduates go South to find jobs — and are generally successful, added Clowes.

Whatever their choice of specialisation in data processing when they graduate, students at Newcastle University have first class facilities with the computing laboratory — which is naturally integrated through its course to those of associated departments.

The laboratory is unusual in that it combines the roles of a normal academic department with that of providing a general computing service for teaching and research in the rest of the university.

It has more than 60 graduate members of staff, and a collection of computers.

The main service is provided on an IBM 370/168, a large machine by normal standards for British universities. It runs an operating system called MTS — the Michigan terminal system, designed to make its use convenient from the 200 terminals spread over the university campus.

There are also minicomputers providing specialised facilities to particular groups of users, and numerous microcomputers to allow students to get some experience on small systems. The digital systems laboratory has a flexible breadboard system which enables experimental hardware to be assembled out of standard chips.

It is these kind of teaching facilities — a high standard of tutors and the belief that computers hold the key to the world's technological success — that are bringing floods of school-leaving applicants to computer courses at the universities in the North and North-east.

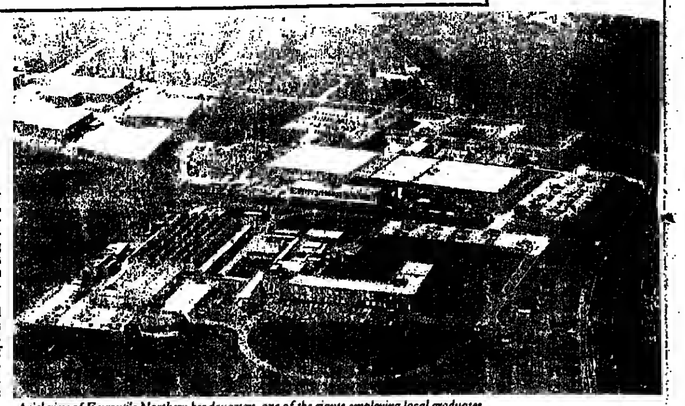
Sadly, the majority of these students are being turned away due to lack of places on the courses.

Andrew Slade, lecturer at Durham University's computer department said: "School-leavers — and many with as many as three A-levels — immediately apply for a place in our department on leaving school. Unfortunately because of this we are heavily over-subscribed and have to turn many away. We have only 16 to 20 places to offer to 150 competing applicants."

With increased use of microprocessors in instrumentation and control and engineering systems, graduates with knowledge and experience in both microelectronics and microprocessors are a valuable asset to an organisation, he stated.

Prospects for computer science graduates were as good, he said, as ever local organisations are seeking just that kind of person to head up computer departments or simply to add maintain systems.

Although many of the companies are small by Ferranti's standards and the other giants employing local graduates, the offer great opportunity university leavers to their first valuable work experience.



Ariel view of Ferranti's Northern headquarters, one of the giants employing local graduates.

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Loudwater, High Wycombe, Bucks
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to reach him not later than 23rd July 1982.

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(9954)

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from £8,200

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(9889)

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Oxford Regional Health Authority

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SCALE 4

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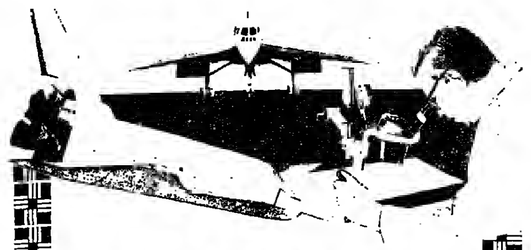
Canvassing will disqualify.

Director of Education

(9952)



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To help us achieve this expansion we are looking for an individual to provide our International Sales Manager with comprehensive technical support. This will be a demanding role which will involve the successful candidate in giving presentations, running benchmarks, configuring systems and providing technical solutions to customer problems.

A high degree of technical skill is called for and experience in a pre-sales environment is essential.

Company benefits for this position are excellent and include a competitive salary, a company car, a non-contributory pension scheme, free life assurance and free B.U.P.A.

For further details ring SUE HAMPSON on Wokingham 788711, or write to MODCOMP, Molly Millers Lane, Wokingham, Berkshire.

(9906)

MODCOMP

Experienced data processing manager

PARIS

A Fortune 500 Construction Company has an excellent opportunity for an experienced, highly motivated, Data Processing Manager in its newly-acquired affiliate in Paris.

The candidate selected will supervise a team of analyst-programmers and will also be responsible for the computer operations at our three processing locations. Candidates should have the following qualifications:

- five years experience with progressive responsibilities in EDP management including systems analysis, knowledge of commercial and scientific applications and languages, and computer operations.
- fluency in french and english.

The compensation package will be in relation with experience of the candidate.

Applications including full details of experience should be sent under **reference 2.567 C** to **PUBLIPANEL** 20 rue Richer 75441 Paris Cedex 09, France.

(9952)

FOR CLASSIFIED ADVERTISING USE

DIRECT LINE 01-661 0121

SYSTEMS & PROGRAMMING

MANAGER – TECHNICAL SUPPORT

City-based Financial Services Company — c. £18000

Our client, a major services organisation involved in the financial market, requires a talented DP professional to manage all technical support functions within their dynamic and expanding installation. Hardware is based on twin IBM 4341 mainframes (another due late 1982), running under DOS/VSE, VM and CICS/VS, supporting an international telecommunications network controlled by two IBM Series 1 machines. The successful applicant will be responsible for the support, maintenance and development of all systems software within this bureau services environment including the management of a 4-strong technical programming group. We would like to hear from candidates who possess a thorough knowledge of DOS/VS, have at least 3 years' systems programming experience plus previous involvement for potential in the supervision of technical personnel. Additionally, an outgoing personality is essential as is the ability to communicate complex ideas and techniques to personnel at all levels.

Ref: M1333

SYSTEMS ANALYST

CITY — To £12000

A major financial institution is seeking to recruit a systems analyst to join a team of professionals who are responsible for the quality control of the entire DP department. Candidates can expect to gain valuable experience within a progressive IBM environment. If you have a minimum of 3 years' analysis experience with a programming background, phone now for further details. Ref: T1335

SENIOR PROGRAMMERS

CITY — c. £10500

Our clients are a leading international bank based in the City whose commitment to DP expansion has created vacancies for 3 senior programmers. Candidates should have a strong IBM OS background and be self-motivated individuals who wish to make positive career progress. Preference will be given to applicants with CICS and database experience.

Ref: T1334

ANALYST/PROGRAMMER

SURREY — c. £10000

A vacancy exists within a rapidly expanding services company for an analyst programmer to develop commercial systems for a variety of companies. If you have 3-4 years' COBOL experience and wish to further your career in a challenging environment, please contact us immediately for further details.

Ref: T1335

OPERATIONS

IBM DOS OPERATIONS

LONDON — £7200-£10000

This manufacturing concern is seeking operations staff at both supervisory and operator levels. An opportunity exists at SHIFT LEADER level, for which applicants should possess a minimum of 6 years' experience in a VM/DOS VSE and CICS environment; previous shift leading experience is essential. There is also a vacancy for an OPERATOR for which approximately 18 months' similar experience is required. Candidates should be self-motivated with a professional approach and the ability to work under pressure.

Ref: W1322

IBM OS OP/SENIOR OPERATOR

CITY — £7,800-£9,100

This is an outstanding opportunity for a self-motivated DP professional to join an established but progressive installation. You should possess a minimum 18 months OS VS1 experience and be fully conversant with JCL & Utilities. The hardware comprises an IBM mainframe and a rapidly expanding Communications Network utilising PDP equipment. The successful applicant can expect total job satisfaction and an interesting long term career path. Salary will be commensurate with experience and a superior range of benefits is offered inc. sub. MORTGAGE and annual BONUS.

Ref: J1232

IBM DOS SHIFT LEADER

C. LONDON — c. £7000 + S/A

We have an excellent opportunity for a mature, highly-motivated individual who is seeking a career move into junior management. The successful candidate, who should be fully conversant with DOS VSE, JCL and Utilities in a TP environment, will progress to a DAYS ONLY role within 6 months. Reporting directly to the Operations Manager, you will be responsible for the daily running of the machine room, supervision and training of a small, busy team and first-line technical support. Current hardware comprises an IBM 4300 mainframe, running on a 2-shift system.

Ref: P1309

IBM OS OPERATOR

C. LONDON — £7500

Major financial organisation based in the City requires an operator with a minimum 18 months' VM/VSE experience; MVS would be an advantage. The successful applicant, who should be both mature and ambitious, will be required to operate a powerful dual-IBM configuration. A first-class benefits package is offered which includes sub. MORTGAGE, annual BONUS, personal loans and n/c pension.

Ref: W1323

UNIVAC SHIFT LEADER

C. LONDON — c. £7500

We have been asked to assist in the recruitment of a Shift Leader with a minimum of 2 years' experience gained in a UNIVAC 1100 environment (preferably 1100/80). You should ideally possess a knowledge of Communications and Utilities. The successful applicant, who will be required to supervise a small team on a 'staggered' DAY-shift basis, can expect interesting long-term prospects as a result of future development plans. Usual large-company benefits apply.

Ref: P1337

ICL 2904/ME29 OPERATORS

W. LONDON/MIDDX.

We have two clients who are currently seeking operators with a minimum of 18 months' 2904 or ME 29 experience to work an extended DAY-shift rota. Please telephone for full details.

Ref: P1301

IBM OOS/OS OPERATIONS

LONDON AND HOME COUNTIES — To £6500

We have a number of vacancies available for IBM operators with a minimum of 12 months' experience, some of which are listed below:

a)	C. LONDON	SEN. OP.	VM/VSE	3-shift	£6500.
b)	ESSEX	OP. x 3	VM/DOS VSE	2- and 3-shift	£7000
c)	E. LONDON	OP. x 2	VM/DOS VSE	2- and 3-shift	£6300+
d)	BERKSHIRE	OP. x 2	DOS VSE	2- and 3-shift	£7000
e)	MIDDLESEX	OP./SEN. OP.	DOS VSE	2-shift	£7500+
f)	C. LONDON	SEN. OP.	DOS VSE	2-shift	£6500
g)	SURREY	OPS./SEN. OPS.	VM/VS1/MVS	3-shift	to £8500
h)	ESSEX	SEN. OP.	MVS/JES2	2-shift	£7000
i)	BEDS.	OPS./SEN. OPS.	MVS/JES 2	3-/4-shift	to £8500
j)	BERKSHIRE	SHIFT LDR./SEN. OP.	MVS/JES 2	3-shift	to £8000

Ref: WJ/GEN

For full details of the above requirements, please telephone quoting the reference number.

VARIOUS

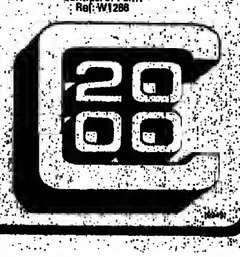
BURROUGHS OPERATOR	Medium Systems	2-shift	C. LONDON
IBM 4 SYSTEMS 34 OP.	6 months+	2-shift	S.W. LONDON
HONEYWELL 34 OP.	Level 64	2-shift	S.W. LONDON

Ref: P/GEN

IBM DATA CONTROL
£6300-£7800
12 months+ OC9 or OS experience
All areas : Ref: W1314

URGENT ! IMS - MTO
Contract or Perm
Ref: W1286

ComputerTwoThousand Ltd
Data Processing Consultants
217-218 Tottenham Court Road
London W1P 9AF
Tel: 01-636 7584 (24 hrs)



West Germany

IBM Systems Programmers

European TP Network and Database Systems

£12,000–£18,000.

This is an opportunity to move into a varied and demanding technical support/software development role. An opportunity also to improve your quality of life in idyllic surroundings.

Braun AG is a highly successful European name in the electrical/personal care and household products market. Certainly in the UK you will be aware of our shaving and haircare range.

We are set in the charming ancient town of Kronberg; enjoying the dual benefits of being surrounded by picturesque rolling hills and having easy access to the cities of Frankfurt and Wiesbaden.

Current systems are based on our 4341 and 370/148 mainframes with a substantial CICS network, and are organised around database techniques. Our technical support team are obviously heavily involved in the development of the operating system and surrounding real time and database software. They are a front-line troubeshooting unit, essential in a time when more advanced techniques are being used in developing new and more comprehensive systems.

We require two professionals, each with a strong IBM Assembler background. Preferably this will include two of the following:

CICS; DL/1; DBOMP; DOS/VSE.

First we'll teach you the German language. Then we'll add to that CICS or DL/1 training, whichever is necessary.

We'll provide: Relocation expenses: an English speaking, forward thinking and professional working environment; technical involvement in-depth and breadth: a new life style.

In the first instance contact our Advising Consultant in the UK – David J. Scarlett on 01-935 0671 or (evenings and weekends) 01-540 2500.

(8547)

Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street, London W1M 5HS
01-935 0671/486 0461

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street, Queensway, Birmingham B3 3JY
021-236 3761

NORTH
Blackfriars House, The Parsonage, Manchester M3 2JA
061-833 0427

BELGIUM
Avenue Louise 327, Boite 4, 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Willemsparkweg 92, 1071 H.M. Amsterdam
010 3120-760947

A New Development Team

Hertfordshire

Principal Consultant/Designer £ Negotiable
Senior Team Leaders/Consultants to £15,000
Senior Programmers to £12,000
Programmers to £9,000

Our client is embarking on the development of one of the largest multiple node networks of computer communications systems in Europe. Being a large, successful manufacturing company they have the facilities and credibility to handle a project of this size. Early study and planning phases are initiated but the main design and implementation teams will be newly recruited.

Principal Consultant/Designer The candidate for this position will probably be a national figure. You will have considerable experience and knowledge of communications and networking at a state-of-the-art level and be capable of representing the company at international meetings.

Senior Team Leaders/Consultants will have several years systems software implementation experience, typically at operating systems level on minis and micros. They are expected to have a good appreciation of hardware architecture. Experience of communications systems would be advantageous.

Senior Programmers & Programmers will have two or more years experience of systems software implementation or technical applications development on minis or micros. Essentially they will be bright people who will be attracted by the scope and challenge offered by a project of this magnitude.

Usual successful company benefits including relocation assistance where appropriate.

Apply in confidence to Terry Horsley by sending personal and career details, or contact him for an application form, evenings Gt. Missenden (02406) 4705 or daytime as below.

HR

H. R. Associates Limited

Executive, Computing and Technical Personnel Consultants
Hill House, Hill Avenue, Amersham, Bucks. HP6 5BQ. Tel: 02403 28383
London office: Regent Street, W1

HR

HARDWARE PLANNING & SUPPORT
with
BRITISH HOME STORES

Based at our Data Centre in Luton

PLANNING ANALYST **To £11,000**
TECHNICIAN, SENIOR OR SUPERVISOR
According to level of entry – £6,000-£11,000 p.a.

If you have experience on networking, minis or IBM mainframes and peripherals, please hear about the varied roles at our professional Computer Centre with its current IBM Mainframes and more particularly with the many new developments in a five year programme covering all of the U.K.

BHS

01-675 4019
Just Listen
You do not need to speak

(9433)

Office Automation

Software Engineers and Senior Software Engineers are needed for research in the application of the latest computing and communication technologies in the office environment involving the higher level network and terminal protocols and all aspects of human interaction. Candidates must be educated to degree level, preferably Computer Science or related area, and able to demonstrate a sound knowledge of a number of the following subjects:

Structured High-level Languages	Portable Software
Software Tools	Operating Systems
Compilers and Interpreters	Databases
Information Retrieval	Telecommunications
Local Area Networks	Packet Switching
Graphics	Electronic Mail
Message Switching	Word Processing
Distributed Systems	Voice Processing

As well as an excellent record of technical achievement, candidates must possess market awareness, understanding of the user requirement and an ability to communicate effectively. Applicants for the senior posts would be expected to have experience in analysis, specifications, design or project management.

Apply to: G. D. Prichard, Administration Manager, GEC Hirst Research Centre, East Lane, Wembley, Middlesex HA9 7PP. Tel. No. 01-904 1262 Ext. 390, quoting ref. P/119.

GEC

(9369)

Commercial Computer Systems

FIELD SALES MANAGER

c£27,000 +car

Our client, a leading manufacturer of interactive commercial/business computer systems wishes to appoint a Field Sales Manager for their thriving North West region (Manchester).

Your prime responsibility will be to lead and develop a team of experienced sales executives marketing an excellent range of systems with an installed value of £30K to £300K, covering a broad spectrum of commercial applications.

To qualify you will be 26yrs to 40yrs with at least three years proven experience in a similar position with a recognised computer organisation.

Alternatively if you are selling hardware/systems, possibly as a large/major accounts manager or a senior sales executive and would like an opportunity to move into management we may be prepared to create a manager designate position.

The importance of this position is reflected in the remuneration package of around £27K, split according to ability, experience and background and will certainly include an attractive five figure basic salary. A car and first class benefits are also included.

For further information in absolute confidence (telephone; Harry Clerk on 031-228 6419 (reverse the charges) or write enclosing career details. Please quote ref: 136/74.

ROYCE

(8458)

ROYCE RECRUITMENT 22 WALKER STREET EDINBURGH

MANAGING DIRECTOR

BDS, a leading supplier of computer peripherals specialising in printer systems, have a vacancy for a Managing Director of Corporate Operations to accelerate growth within the U.K. and Western Europe.

The candidate must be able to demonstrate a successful marketing background with total responsibility for full financial control.

Excellent salary and usual fringe benefits will apply.

Please write with c.v. to:

Personnel Manager
BDS COMPUTER (UK) LTD.
125 Highgrove Street
Reading, RG1 5EN

to arrive by June 24

(9541)

SMR
Sales & Marketing Recruiters Ltd

SALES EXECUTIVE

TIME TO CONSULT THE SPECIALIST?

When you are dealing with the major factors in your life you can only afford the best, and few things are more important than the development of your career. Certainly, that is how the major computer manufacturers feel about their personnel selection and why such companies as CONTROL DATA, COMPUTER TECHNOLOGY, DATA GENERAL, HONEYWELL, PERKIN ELMER, REDIFFUSION, SPERRY UNIVAC and many others continually use our organisation for the recruitment of experienced Sales people.

We fully understand the needs of such companies as well as knowing about the many job opportunities that never appear in the press. Those well respected names depend on our professional skills and confidentiality. Can you afford less?

Contact: Alan Williams
Peter Hubbard or Alistair Scott – ANY TIME!

(8972)

LONDON & SOUTH
25 Oxford Street, London W1 (01) 734 8772

MIDLANDS & NORTH
29 Bore Street, Lichfield, Staffs. (0543) 56612

Also at Reading, Bristol, Cardiff and Manchester
SALES TRAINING, MARKET RESEARCH AND RECRUITMENT

SALES PROFESSIONALS - £35K

BASIC £9K-£12.5K
TARGET EARNINGS UP TO £35K
HIGH GUARANTEE, CAR, ETC., ETC.

Our client, a major manufacturer, is currently seeking salespeople in the following categories:

NEW BUSINESS SALES. Good education, a good record in selling business equipment, and a sound knowledge of commercial applications are required.

COMPETITIVE SALES. You must already be a Mini- or Mainframe salesperson with a first-class track record and an in-depth knowledge of competition.

STRATEGIC ACCOUNT SALES. As above but preferably with the additional experience of selling to major accounts.

Please telephone Camberley (0276) 32898 (office hours) or Fernborough (0252) 516978, evenings and weekends.

CAB

COMPUTER CONSUMER ADVICE BUREAU LTD.
Computer and Recruitment Consultants
5 Station Lane, Blackwater
Near Camberley, Surrey

(8903)

COMPUTER AUDITOR

POI (3-7) £10,011-£11,064 Incl.

We are seeking to appoint either an experienced systems analyst/programmer with an appreciation of the role of internal audit in a large local authority, or a qualified accountant with at least three years' relevant experience in the audit of computer systems and operations.

Croydon's computer development programme is being constructed around a Honeywell Level 66 (operating under GCOS 6/B3) together with a number of mini-computers.

The Authority has recently installed a financial information package (GL+) and this will be significantly developed over the next few years. Other major financial and management systems are also planned (OLO for example) with the creation of a terminal network.

The post is located within an Internal Audit Section of 15. The postholder will be expected to be highly self-motivated and to make a positive contribution to the development of the computer Audit function in Croydon.

CROYDON

For an informal discussion, contact Lynne Yardley on 01-686 4433 Ext. 2140

Applications in writing to: Director of Finance, Municipal Offices, Fell Road, Croydon, Surrey CR9 1BQ.

(9850)

DUBAI-United Arab Emirates

Computer Sales-£22,000+ STERLING

THE CLIENT
- Newly appointed U.A.E. distributor for major name "Turnkey systems".
- Local company—in-house engineering and software support.

THE JOB
- Selling "Turnkey systems" to international business community.
- Dynamic growth area—career advancement prospects.

THE CANDIDATE
- Successful computer sales record; overseas experience useful.
- Ambitious, enthusiastic.
- Likely age: 25/30 yrs.

Excellent commission structure with tax-free earnings, accommodation and car provided.

Forward detailed career history and recent photograph to Mike Pension (no calls revealed without permission).

Mike Pension & Associates
3 Exchange Place, Middlesbrough, Cleveland TS1 1DR.

SALES BIT

Quality of Managament — 14

Training will fail without discipline

SALES training is not an easy process. Salespeople can be demanding students, expenditure on sales training is difficult to justify in absolute financial terms and even when the best possible training programme has been established there is always a significant chance of failure.

Failure in sales training is very much a relative term. In some circumstances it could apply to an entire class, in others, to one or more individuals. The blame can often be directed at the content of the course, on some occasions the calibre of the instructor or even an inappropriate venue. What seldom seems to come in for criticism is the discipline within which tuition is carried out.

Many training courses fail to achieve their full potential because there is insufficient discipline to ensure that absolute priority is given to the educational process and also to guarantee the fitness of the individual to make a maximum contribution to the proceedings.

There is a time-honoured business adage which suggests that business always comes first. This sentiment is often exploited by salespeople on training courses who work on the assumption that training is not business and use every opportunity to avoid classwork, and the sometimes rewarding conversations of refreshment breaks, by rushing off to make urgent telephone calls or attend impromptu meetings.

This should not be allowed under any circumstances. Training is such an infrequent and expensive process that once it has been put into effect it must have precedence over all operational activity. The waste of investment on such individuals and the related disruption of other students must be avoided.

Any well organised salesperson should be able to make arrangements with his other clients and prospects to be absent for a week or so.

Most interruptions at sales courses are due to salespeople informing both clients and colleagues at large that they are unfortunately obliged to attend a training course but can always be contacted by telephone and will call back during a convenient refreshment break.

That brings to mind the question of venue. Try to avoid mounting any kind of significant training course at your own premises. In an hotel it is relatively easy to issue an instruction that there should be no interruptions and that any messages, if you allow them at all, should be held until an appropriate time. In the office all manner of people could be lurking around to waylay students as soon as they emerge from the classroom.

Many courses I have attended have ended in evenings which decline into an alcoholic marathon. This may do a lot for relaxation and social relationships, but it does very little for learning and concentration in the classroom.

There is no more depressing sight for an instructor than a gang of bleary-eyed zombies who are concentrating more on the anguish of withdrawal symptoms than the lessons of the day. It is not particularly motivating for the more abstemious in the class, either.

I have also found an obsession on the part of instructors to work participants "until they drop". There is always the inevitable project that demands several 12-hour days and perhaps the necessity to work right through until the early hours of the morning to get the job completed.

I have never been sure what the intention actually is. Perhaps a test of character, the ability to survive under stress, the simulation of real business environment? More likely it is an indication that too much is being crammed into the course or the instructor has insufficient perception of how much people actually learn when they are worn out!

Subject material should, in my opinion, relate to the duration of the normal working day and the average ability of the non-student mind to accept and absorb information. I know of one highly enlightened instructor who deliberately plans his courses to cater for periods of formal exercise and relaxation. I am told by one of his students that he has never learned so much on a course or enjoyed himself so much as with this particular trainer.

Just as in management, you don't get the best out of people by driving them into the ground. And the stereotype is not necessarily the best strategy.

There are several areas in which regular and continual training is absolutely essential:

- Prospecting and qualification;
- Territory management and planning;
- Handling objections;
- Closing;
- Product knowledge;
- Applications knowledge;
- Competitive products;
- Target industries;
- Financial understanding.

It is extremely difficult for salespeople to succeed without complete fluency in these areas.

Alan Williams

PUZZLE ANSWER

ONE of the six numbers will certainly be obtained with the first throw, thus leaving only five numbers. The probability of getting one of these five is 5/6 i.e. the average number of throws required in this case is 6/5. Similarly, the probability of then throwing one of the remaining four numbers is 4/6, requiring an average of 6/4 throws. Continuing this reasoning, we find that the average number of throws required to obtain all six numbers is the sum of the individual averages: 6/6 + 6/5 + 6/4 + 6/3 + 6/2 + 6/1 = 147/10 = 14.7.